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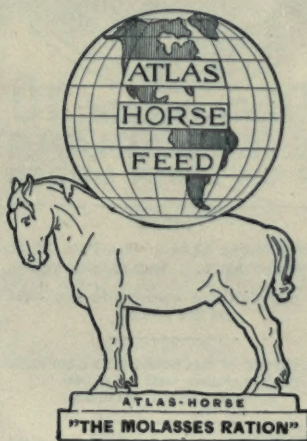
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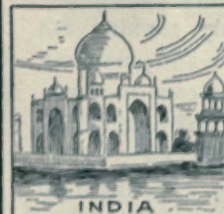


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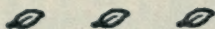
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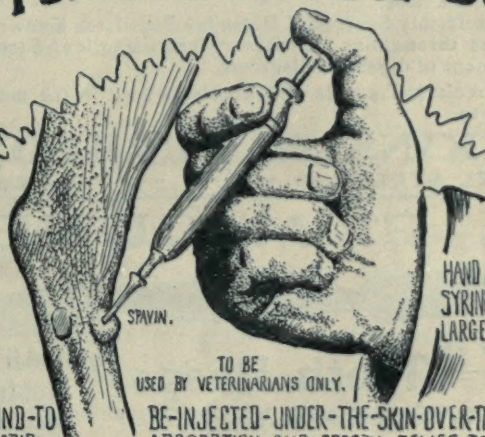
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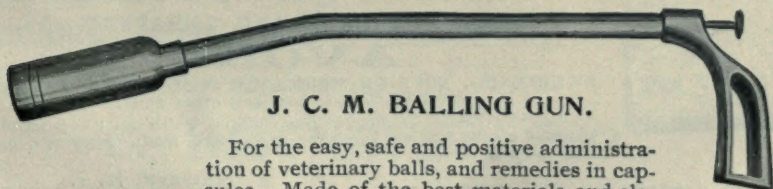


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AMERICAN VETERINARY REVIEW.

OCTOBER, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, Aug. 15, 1907.

CUTI AND OPHTHALMIC REACTION.—As might be expected, the question of the *cuti-reaction* by the application of tuberculin, to which I alluded last month, has created an agitation which has given rise to many communications of late and started investigations in every direction. Among the first are the inquiries made by Prof. Vallée again, with the ophthalmoreaction by tuberculin. Like Wolff-Eisner, he has observed that the introduction in the eye of a tuberculous animal of a minute quantity of tuberculin diluted in physiological serum, has given rise, from the twelfth to the twentieth hour to a perfectly marked ocular reaction. There is then a slight ptosis, lachrymation, œdema, active congestion and sometimes ecchymosis of the conjunctiva and often formation of purulent clots. Like the *cuti-reaction*, this condition lasts and may remain for several days. While it is still in full development, the animal gives marked reaction to tuberculin injected under the skin. The ocular reaction is so much easier recognized by comparing the affected eye with that of the opposite side. In no cases are these conditions observed in healthy subjects. Although this ocular reaction cannot be systematically used in veterinary medicine, because of the possibility with which it might be produced by other means, it has a great interest when compared with the phenomena of the *cuti-reaction*. Both justify inter-

esting interpretations of the mode of action of tuberculin, while the method of scarifications furnishes a new mode of administering tuberculin with a therapeutic object.

* * *

Evidently the cuti-reaction is now the object of study, and, although every one is starting on their vacation, we hear of the results obtained by various experimentors. The first that has come to us are those obtained by Mr. Fernand Arloing, who made experiments in the Laboratory of the Director of the Lyon School, who recorded them at a meeting of the Société de Biologie. The experiments were made to control and confirm or upset the communications of Prof. Vallée on the subject. Mr. Arloing gave the results of his tests made on 28 animals, 19 of which had *experimental* tuberculosis and 9 were sound and healthy and used as controls. Arloing concludes that it has been impossible for him to observe a specific cutaneous reaction, that he has never noticed pustules, papules, etc., and that consequently the cuti-reaction to tuberculin is not constant.

This is all very well. But Vallée tells plainly why Arloing has not succeeded. All the 19 subjects he used were *experimentally* tuberculous, and among them 12 were dogs and goats, conditions and animals entirely unappropriate to the test, besides the fact that their tuberculosis was due to bacilli of human origin or of one in a peculiar homogeneous culture. Vallée's animals were all infected with tuberculosis of *natural* infection. Arloing's test was entirely different from that of Vallée. Therefore, on that point, the question is solved. It is for me anyhow, as I have seen the reaction, and there is no doubt in my mind that it may be of great value to the diagnostic point of view. Many veterinarians are already testing it and further publications will say more on what can be expected from it. Here is something already!

* * *

Prof. Moussu, as soon as the communication of Vallée was made, set to work to find the indications furnished by the cuti-

reaction in bovines, which gave doubtful reactions to injections of tuberculin either because the lesions were too extensive or because they were suffering with actinomycosis, distomatosis or broncho-pneumonia.

By his experiments, he first confirmed the fact that healthy bovines do not present any cuti-reaction. As far as tuberculous animals go, he considers that they must be divided into two classes or categories. Those which have very marked tuberculosis and that do not give positive results and those in which slight or limited tuberculosis exists, which furnish a typical reaction. However, he has failed to notice the pustulation that he had observed in the animals that Vallée had shown him. What is characteristic, especially in the reaction, is the œdematous infiltration, followed at the period of desiccation, by the formation of small crusts. When the skin is thick, the scarifications must be free, deep and giving rise to slight oozing of blood; superficial scarifications do not permit the reaction to take place; too deep scarifications (true incisions) are followed by sub-crustaceous cicatrization, which conceal the effects. Animals with fine skin react best.

Besides these, Moussu has noticed an interesting peculiarity in an animal which having given a typical cuti-reaction at one time was tested 15 days after to another by the same method. The reaction then appeared rapidly: 15 minutes after the application of the tuberculin, there was a marked œdematous swelling, an hour later it was a large patch of œdematous infiltration, 24 hours after everything was gone. The reaction was rapid and short.

Bovines with purulent infection, with cutaneous suppuration, with chronic diarrhœa, did not react. One animal having actinomycosis gave only a defective reaction. Three dogs experimentally tuberculous gave no cuti-reaction.

* * *

DIAGNOSING TUBERCULOSIS THROUGH THE TRACHEA.—If in days gone by the diagnosis of tuberculosis was in many in-

stances a difficult task, it has now been considerably changed. Besides the perfection that has been brought to assist in the clinical examination of suffering animals, by the test of tuberculin in sub-cutaneous injections, we may look to cuti-reaction as one of our future positive means, and besides those there is one which is resorted to in the Netherlands and to which an article in the *Journal of Comparative Pathology and Therapeutics* refers to extracts made in German papers. It is entitled the "Collection of Sputum for the Diagnosis of Pulmonary Tuberculosis in Oxen by Means of Tracheotomy."

Two methods are resorted to: (1) Dr. J. Poels describes one as follows: The animal is thrown to the ground, the head drawn back and the neck extended. A trocar is thrust into the trachea between two rings about the upper part of the neck. The trocar is withdrawn and a wire carrying a fragment of sponge or a camelshair brush introduced. It is claimed that the instrument can be introduced as far as the bifurcation of the trachea and withdrawn covered with mucus. The method is recommended for the following purposes: In doubtful cases, to differentiate the condition from pleuro-pneumonia contagiosa, to examine dairy cows and for calves intended to be used for producing vaccine. (2) This is Oberbeck's method. The animal is not cast, but held only by assistants. A small incision is made through the skin in front and about midway down the trachea. While this is held with the left hand of the operator, with the right he introduces the canula between the rings and into it pushes an iron wire, one end of which is twisted round to hold a little plug of cotton and is carried as deeply toward the bronchi as possible. Sufficient sputum can be collected for examination and culture if necessary.



RECTAL EXAMINATIONS IN COLICS IN HORSES.—In previous Chronicles I have written some lines on the subject of rectal examinations, which I hope have not been without interest to our readers. To-day, I may be allowed to consider an

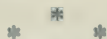
article, from the *Deutsche Tierärztliche Wochenschrift*, which has been reproduced by the *Revue Générale*, and is due to Prof. Klett, of Stuttgart, on the "Method of Rectal Examinations in True Colics of Horses," and which adds much to my previous communication.

The author of this mode of exploration is not known, but it is probable that he was a practitioner, who had the suggestion of resorting to it, in treating colics by obstructions. German literature possesses a little work by Ehrmann, published in 1778, which speaks of it, although then it was only with the object of emptying the rectum. In 1827 Tenneker recommends its application so as to make pressure on the bladder. But it is Diepholz, who first in 1839 seemed to attempt making exact diagnoses with it and recommended resorting to it. Before any thing, the rectum must be emptied as far as possible, to be sure that there is no dilatation or diverticulum, no abscess or cicatricial stenosis. Hutyra and Marek claim to have diagnosed torsion and volvulus of the floating colon by it. Then in 1890 Telkmann published a method of diagnosis of intestinal torsions by rectal exploration: The left hand feels, on a level with the fourth lumbar vertebra, a very painful stretched cord, which is the mesentery twisted in a vertical position and slightly deviated to the left. Moller confirms this method and adds that if the torsion occurs on the right, the turns of the mesenteric cord run from forward backward and from outwards inwards and reciprocally, if the torsion is to the left. But Hutyra and Marek claim that intestinal overloading and meteorism may also give rise to stretching of the mesenteric cords, and Tensen affirms that these cords are not perceptible as soon as the tympanism disappears. And besides all torsions do not necessarily always take place in the posterior part of the intestine and near the pelvic cavity.

* * *

Prof. Klett grants a certain importance to the pelvic curvature. In cases of obstruction, its convexity is found to the

right; in cases of torsion of the colon, it is found to the left. Palpation of the cæcum gives the following information: If the cæcum is found distended by gases, but the loops of the intestines are normal, it is a proof that the cause of the colic is forward of the ileo-cæcal valve. But if the circumvolutions of the small intestine are distended by gases, the cause is back of it. For Klett, the gases of the large intestine could no more pass the ileo-cæcal valve than they can be evacuated from the stomach by the cardia. If gases are found in the small intestine, it is because they have been formed there or because they come from the stomach. However, it must be remembered that in invagination, gaseous production occurs only towards the end. Examination of the cæcum must never be neglected as torsions, ruptures, etc. In relation to volvulus, almost all authors agree in saying that its diagnosis can be confirmed only at post-mortem, although they all draw the attention to the constant tympanites of the intestinal convolutions of the small intestines. These symptoms, added to the great pains of the animal and the negative examination by rectum, must bring one to the conclusion that volvulus is present. Often a first exploration is not sufficient to allow a diagnosis to be made and it must be made over again some little time after, and Klett does not doubt that a repetition of this examination will in many cases allow a positive diagnosis. The author mentions also a number of interesting cases in which he resorted to rectal examination with most satisfactory results.



SANITARY INSPECTION IN ENGLAND.—Those among us who have occasion to read English professional journals have been able to notice how much, lately, the question of sanitary inspection has been agitated in England, how progress has been made and reforms introduced.

A noticeable event has lately occurred by the establishment of a veterinary staff to the Board of Agriculture in addition to the already existing veterinary and assistant veterinary po-

sitions. By the act of the Commissioners of the Treasury, the next staff will consist of a superintending veterinary inspector and ten veterinary inspectors over and above twelve assistants. These officers, says the *Veterinary News*, devote their whole time to the work in connection with the schedule of contagious diseases of animals and are not infrequently employed to inquire on other diseases of an apparently contagious nature. A work which, it seems to me, is quite similar to that of some of the officers of our B. A. I.

Before appointment, examinations are to be passed before the Civil Service Commission and here is the syllabus of the examination, which some of our friends in the States may not object to look at:

"Subjects of examination: (1) Pathology and Bacteriology; (2) The Diseases of Animals' Acts, 1894 to 1903, and any act amending the same; (3) and the Orders of the Board of Agriculture and Fisheries thereunder. *In subject 1. there will be a practical as well as a written examination.* Candidates must pass to the satisfaction of the Civil Service Commission in both these subjects.

"Syllabus of the examination in Pathology and Bacteriology: (A) Written examination: (1) General Pathology; Inflammation; Degeneration and Infiltrations; Neoplasms. (2) Bacteriology; Bacteriological Methods; Principles of Immunity and Vaccination, Disinfection. The Bacteria Pathogenic for the domestic animals, including the morbid, anatomy and histology of the lesions that they produce, and the methods whereby certain diseases are communicated from animals to human beings. (3) Protozoölogy; General Biology of the Pathogenic Protozoa; the Coccidiosis, Trypanosomiasis, Piroplasmoses of the domestic animals. (4) Epizoölogy; the Etiology, Symptomatology, and differential diagnosis of the contagious diseases of animals. (B) Practical examination: Candidates will be tested with regard to their practical knowledge of bacteriological methods, and especially with regard

“to their ability to apply these in the diagnoses of the principal
“contagious diseases of the domestic animals.”

* * *

SCOPOLAMINE is an alkaloid, rather similar to atropine, which is likewise found in some virulent solaneous plants, such as *scopalia*, *japonica*, *hyosciamus niger*, *datura stramonium*, and *atropa belladonna*. It resembles atropine by many of its properties, is a powerful dilator of the pupil (five times as strong, it is said), it diminishes secretions, accelerates the heart and paralyzes the terminal motor nervous apparatus.

Its effects in animals have been studied by Prof. Dupuis and Van Den Eeckhout and its therapeutic applications recorded. They have studied with great care the method of mixed anæsthesia by scopolamine and chloroform in horses. An injection of from 2 to 6 centig. of scopolamine, given an hour before anæsthesia is applied, has a very good effect on its administration. Sleep and muscular relaxation take place very rapidly and that with a small dose of the chloroform. For them scopolamine is superior to the mixture of atropine and morphine, which is sometimes used. The sleep is quicker and deeper and also is the muscular relaxation more complete. Besides these, scopolamine has an advantage over atropine, it is less toxic. With scopolamine, the period of chloroformic excitation of the beginning is absent and it is not necessary to push the anæsthesia until the oculo-palpebral reflex has disappeared. This can even be dangerous as the animal is entirely anæsthesied and yet the reflex remains. The condition of the muscular relaxation and principally of the sphincter, and is the guide.

The dose for horses must not be higher than 1 centigramm and for dogs 3 milligramms.

* * *

In relation to this alkaloid, I have received from Dr. Domenico Bernardini, of the Royal Superior Veterinary School of Milan, a pamphlet entitled, “Sull' Applicazione Della Anestesia Morphino-Scopolaminica del Cane.” (Upon the application of the morphino-scopolamine anæsthesia in dogs.)

Scopolamine has been much used in human medicine and many are the authors who have written upon it. Dr. Domenico Bernardini reviews in this pamphlet the general history of the alkaloid, its effects, and actions on the various functions of the body; he has made many minute experiments by using the solutions of bromhydrate of scopolamine and muriate of morphia which he injected together, either in dogs or in solipeds, and the valuable conclusions he has derived from them are of great interest. They are as follows:

(1) The dose used in man is insufficient to produce anæsthesia in dogs.

(2) The best corresponding dose in dogs is of 1 centig. of morphia for each kilogr. of the living weight of the animal with $\frac{1}{2}$ to 4 milligramms of scopolamine, quantities which can be reduced or increased after an hour according to the effects produced.

(3) Although the effects of morphino-scopolamine injection cannot be compared to those of general anæsthesia, they are always sufficient for all ordinary operations.

(4) The association of hypnotics is not favorable. That of chloroform is even sometimes dangerous.

(5) Dogs can tolerate enormous doses of scopolamine with or without morphia.

The bibliography relating to scopolamine is quite extensive, but pertains more to its use in human medicine. To those who might desire more information, I will refer them, as easier to obtain in the States, to the *New York Medical Journal* of 1906, No. 13, the *Annales of Veterinary Medecine de Bruxelles*, 1906, and perhaps the *Journal de Medec. Veter. et Zootechnie*, 1906.

* * *

THE STATUS OF VETERINARY PRACTICE IN FRANCE.—That years ago European veterinarians should for reasons of various nature go over to America or even that at the present time and with the limited opportunities, that any part of Europe offers, some should cross over and be willing to submit to the severe

requirements that would face him before being able to set up in practice, it is not very surprising. But that should, *vice versa*, an American veterinarian have the idea or desire to come to the Old World and see what he can do, seems to me almost incomprehensible.

I have lately received a letter from a good friend of America which reads: "My dear Professor—Some of my relatives and " friends in Paris have requested me to send a competent American veterinarian over there to practice veterinary medicine. " One of our recent graduates is inclined to accept the proposition made. The question now is, Can he practice in France? " Will you kindly tell me the conditions with which he would " have to comply in order to practice there?"

The answer to this is short and as, after all, others might have a similar foolish temptation, I thought it would not be without advantage to give it a wider range. Here it is:

"As there is no law in France regulating the practice of veterinary medicine, anyone can come here, set up his shingle and go to work. However, under severe regulations and laws he is forbidden to touch contagious diseases and sanitary work. These are strictly forbidden to him."

And I closed my answer in saying to my friend that if he had at heart the success of his graduate, and if he is competent, he would do better not to advise him to come over, as I know too well the inside of French veterinary work to doubt of his failure.

The profession is crowded; as I have said, it is not protected by laws as in most of our States; the work of sanitary medicine is closed to him, the army also; what then? the prospect of a practice amounting after years of hard work to probably not as much as a graduate of *two or three years* would have in any part of the United States.

Anyone with knowledge, conduct, ability and ambition can do better than exile himself, even to come in this beautiful country, birthplace of veterinary science of the world, but which is still behind America, having no laws to protect her members.

Yet, if anyone wishes to try and wants to know more about it, let him apply to me; he will always find me at his disposal and ready to help him.

* * *

INVITATIONS AND LITERATURE RECEIVED.—On July 17th I received a letter which I might have answered last month had it come two days sooner. However, it matters not, and to-day will do as well, to carry the writer my thanks. The letter was an invitation from the Secretary of the Veterinary Medical Association, of New Jersey, to be present at the meeting that was to take place on July 12th, five days before the letter reached me. Thanks to you, dear Dr. Lowe, but I certainly would have arrived too late for your meeting and surely I would regret still more after reading the beautiful programme of papers and discussions. It will be for another time if you honor me with an invitation in time!

Dr. R. P. Lyman sent me an invitation to the meeting at Kansas City. It came just in time (to-day), and I was there—telegraphically represented!

* * *

I will close for to-day in sending my thanks to the following authors: "Municipal Meat Inspection," by G. R. White, M.D., D.V.S.; "The Importance of Meat and Dairy Inspection," by W. H. Dalrymple, M.R.C.V.S.; also a circular on "Anthrax and Charbon" by the same; "Subjects in Veterinary Medicine of Interest to the Physician," by Mark White, V.M.D., and from the Kansas City Veterinary College, Nos. 11, 13, 14, 15, 16 of its quarterly publication.

A GREAT VETERINARY CONVENTION.

The forty-fourth annual meeting of the American Veterinary Medical Association has passed into history, and the chapter which tells its story is the most glorious of any that have preceded it. The present number of the REVIEW gives a fair synopsis of the event as well as several of the more important

of the papers read and discussed; a little later the official report will be issued by the Publication Committee, which will give fuller details, with reports and papers in greater profusion. But no amount of descriptive writing can replace the pleasures and profits of actual attendance and participation in the proceedings. Where, however, this has been denied, the pen must furnish a substitute. The REVIEW has been fortunate in securing copies of most of the papers of greatest importance, and, aside from those published in this number, it will produce others monthly for several issues.

One of the striking features of the 1907 meeting was the enormous attendance, there being registered 634 members and visitors—almost double the number at any former meeting. This may be accounted for by the fact that the convention was held in what is rapidly becoming the center of veterinary population in America (the great Missouri Valley), and by the important fact that it was accessible in equal proportion to the profession of the whole country. Veterinarians from the East had to travel quite a long distance; but not so far as those from the Pacific Coast; dwellers in the Canadian Northwest were almost as near to the convention city as those residing in Louisiana and Alabama, while the Buckeye, and the Hoosier, and the Wolverine could readily reach the meeting. How different when the meeting-place is in an extreme section of the country, like New Haven, or Philadelphia, or San Francisco, and we commend the example of 1907 to the Executive Committee when they come to make a decision for the meeting place of next and future years.

A second point of commanding prominence at the Kansas City meeting was the evident tendency to a more uniform education by the colleges of the country, as expressed in the papers and discussions from many and various sources, and the concentration of teaching to schools financially independent of student fees. While entrance requirements are sought to be raised in all quarters, it was evident that New York's mistake of too rapid elevation is not to be repeated. Her example is too pitiable, but, in the long run, it may prove of service in

saving other states from a similar error. A plan was submitted to the Faculties Association by which all members shall agree to a high school diploma or its equivalent in 1912, but we fancy this time limit will be considerably extended before the adoption of the proposition. However, the sentiment before both the A. V. M. A. and the Faculties was one of extreme unrest; advancement must not longer be temporized, and it seems likely that whatever power is resident in the National Organization and the Examining Boards will be exerted to raise the standard in all schools. It is becoming more apparent all the time that a school whose graduates are ineligible to membership in the A. V. M. A. and who may not compete for a practice license in the majority of states cannot hope to attract students worth having and will sooner or later die of inanition.

On the other hand, the Association is pursuing the wisest course in going slowly; in endeavoring to lift up the weaker schools, rather than to crush them. But, if they absolutely refuse the outstretched hand the only alternative for them is to take the consequences.

Milk, dairy, and meat inspection received full consideration, and the general tenor was for greater knowledge of those subjects by veterinarians.

If there was one section of the program weaker than another, it was that devoted to practical subjects—that is, the reading and discussion of papers of direct interest to practitioners; but what was lacking in the convention hall was amply compensated for in the clinical amphitheatre. This year, more than ever, was the necessity for section work made apparent.

The management of the great gathering by the Local Committee was perfect, and nothing but praise for it could be heard or felt.

THE NEW YORK STATE MEETING.

On account of the congested condition of our pages, the full report of this important meeting, which occurred in New York

City, Sept. 24, 25 and 26, will be deferred until the November issue. It may be stated, however, that it was one of the most successful gatherings of the Empire State veterinarians ever held, and a number of important reforms were put into motion. For instance, the unsatisfactory condition of the practice laws of the state was forcibly brought to the attention of the Association in the address of President Williams, and later his recommendations were taken up by the Resolutions Committee and presented to the Association for action; this the latter did by unanimously adopting them, and it is ardently hoped that, with the aid of the Education Department, they may be introduced in the Legislature and become a part of our laws. The REVIEW has cried out for years against the inadequacy of the laws governing veterinary practice in New York, and it welcomes with enthusiasm this evident sincere attempt to amend them.

THE EDUCATIONAL PROBLEM PUNCTUATED.

As a contribution to the complex question of veterinary education in this country, we commend the report of Chairman Pearson, of the Committee on Intelligence and Education of the A. V. M. A., presented at the recent annual meeting, and which we are enabled to thus early lay before our readers. He takes a broad, statesmanlike view of the situation, and draws emphatic conclusions. Not only does he show the inadequacy of our present system, but he points the way to practical attainment of his ideals. An important result of his reasoning is that as the federal government is fostering through grants and appropriations the agricultural and live stock industries, it should extend its munificence to veterinary schools, since they contribute so much to the success of both. Read it all the way through.

A VETERINARIAN HONORED.

News comes from the Philippines that Dr. George E. Nesom has been appointed Director of the Bureau of Agriculture of

the Philippine Islands, to succeed Prof. W. C. Welborn, who resigned on account of ill-health. The veterinarians of the Archipelago are particularly pleased with the achievements and success of their colleague, and they will assist him in every way in his arduous work of freeing the Islands of the many tropical plagues among domestic animals.

THE CARRIAGE HORSE COMING BACK.—Signs are not wanting that the automobile as a vehicle for town use is beginning to pall on the tastes and sensibilities of New Yorkers. As showing which way the wind is blowing there is a whole straw-stack of suggestions in two or three recent happenings in the horse and carriage trade. Brewster & Co., who are among the largest builders of high grade broughams in the world, have received more orders for these aristocratic town carriages this fall than last, and Healey & Co., whose work commands a higher price than that of almost any other coach builder in the country, also report a slight revival of activity in this branch of their trade. As yet it cannot be said that the builders of less costly carriages than those of Healey and Brewster are sharing equally in this improvement in the brougham trade, but this may perhaps be accounted for by the fact that persons who ride in \$1,500 broughams are leaders, not followers, of fashions, and that the reaction indicated by the Healey and Brewster trade has not yet begun in earnest in the lower priced work. An incident of the week just ended affords evidence, however, that many buyers of moderate means, as well as millionaires, are beginning to realize that no kind of motor vehicle with exposed cog wheels and machinery can ever present the same smart, aristocratic, attractive appearance as the well appointed brougham or cabriolet turned out with a matched pair of finely modeled, richly colored, brilliant actioned horses of aristocratic bearing. At Van Tassell & Kearney's regular semi-weekly auction sale on Tuesday a cabriolet brought \$760 and a brougham brought \$825. These are record prices for second-hand carriages sold this season and are almost up to the standard of values current when automobiles were unknown. Not less significant than the prices were the number and character of the bidders who came to buy these and other carriages in last week's sales. Mr. Kearney said it looked quite like old times and expressed himself as being much pleased with the outlook.—*New York Herald*.

ORIGINAL ARTICLES.

VETERINARY COLLEGES.

REPORT OF THE COMMITTEE ON INTELLIGENCE AND EDUCATION
OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION.

BY LEONARD PEARSON, CHAIRMAN.

For the last few years your Committee on Intelligence and Education has published statistical statements and descriptions of the work of the various veterinary schools in North America. These statements have furnished information drawn from the catalogues of the various institutions, from replies made by representatives of the institutions in response to inquiries from your committee and reports from members of this association appointed to visit the different schools. From the information obtained through these and other channels, each member of this association, and every progressive veterinarian of the United States, must have a fair conception of the quality of work that each school is prepared to do and he must be informed, in a general way, as to the kind of work that each school is actually doing. On this account no effort has been made to obtain and to detail statistical information in regard to the schools. In fact it is scarcely possible to obtain information of real value, in addition to that which is already contained in the records of the recent meetings of the association, without going to the expense of sending around to all of the schools an impartial visitor. This expense your committee was not authorized to incur.

It is, therefore, assumed that the present status of the schools is well known to you. This assumption will obviate the painful necessity of considering each of the schools separately, with the view of pointing out its excellencies and its defects. Such a duty would, indeed, be a painful one, because the defects so enormously outweigh the excellencies. Without entering, in

this report, upon a criticism of individual schools, it is proposed to outline, briefly, the organization, equipment and budget of what might be termed an adequate veterinary school; that is to say, a school organized and equipped to conduct its work in a way that would adequately comply with the proper demands upon such an institution and thus to furnish a standard for measuring each school.

The outline that follows is not utopian, nor is it even ideal, but it is intended to be such a plain, business-like statement as might be prepared in response to a request to furnish a sketch of what is needed in order that the veterinary sciences may be taught in an adequate manner and in a way that is proportionate to the needs of the country and in harmony with the development of modern technical and professional schools. With such an outline each member of the profession can measure the efficiency of a given school and the relative merits of different schools can be compared.

A veterinary teaching institution may naturally be divided into three parts:

- The teaching body,
- The material equipment,
- The student body.

I. THE TEACHING BODY.

The faculty and the subordinate teaching staff may, naturally, be divided into groups according to the subjects taught. The following is suggested as an appropriate classification of the subjects of instruction, and, hence, of the work of the teaching body:

- Anatomy,
- Physiology,
- Pathology,
- Hygiene,
- Surgery,
- Medicine,
- Animal engineering.

It is proposed that all of the various branches of instruction shall be grouped under the above general headings. In more detail the classification would be as follows:

1. *Anatomy*.—Histology, embryology, biology, zoölogy, statics and mechanics.

2. *Physiology*.—Chemistry, principles of nutrition, physiological action of drugs, materia medica, medical botany, pharmacy.

3. *Pathology*.—General pathology, special pathology, morbid anatomy, pathological histology, post-mortem examinations.

4. *Hygiene*.—General hygiene, special hygiene, including immunity, bacteriology, meat inspection, milk inspection, dairy farm inspection, epizoötiology.

5. *Surgery*.—Surgical anatomy, surgical diagnosis, surgical pathology, operative surgery, horse-shoeing, obstetrics, clinics.

6. *Medicine*.—Physical diagnosis, laboratory diagnosis, principles and practice, special therapeutics, clinics.

7. *Animal engineering*.—Animal production, breeds of animals, breeding animals, judging animals, stock farm management, hippology, meat packing and manufacturing, dairying, etc.

For their full development a large number of men could practically be employed in each of the above departments. It is not proposed to outline a classification to provide for research, but only for the practical work of veterinary teaching. With this in view, it appears that each of these departments should be taken care of by one professor and two assistants. This calls for a teaching force of 21 men. Undoubtedly all of these teachers should devote their best energies to the work of the school. If they were permitted to accept outside employment it should be only in the line of the subjects taught and should be limited in amount. The professor at the head of each of these departments should receive a salary of not less than \$3,000 (\$3,000 to \$5,000); the first assistant should receive a salary of not less than \$1,800 (\$1,800 to \$2,500), and the second assistant should receive a salary of not less than \$1,200 (\$1,200 to \$1,800). Therefore, the minimum charge for the salaries of the teachers in

each of the seven departments amounts to \$6,000 a year. It is manifest that adequate work cannot be done for less, because it is impossible to conceive of the branches enumerated being properly taught by a smaller staff, no branch enumerated is superfluous and the salaries which form the basis of this estimate are minimum salaries, as measured by salaries now ruling for teachers engaged in more or less similar work in universities and agricultural colleges.

2. MATERIAL EQUIPMENT.

An adequate veterinary college must have a school equipment and a hospital, or clinical equipment. The school equipment must comprise facilities for teaching all of the subjects excepting clinics under the seven headings. This calls for class rooms, laboratories and illustrative material. In order that the work may be conducted without interruption and delay, it is necessary that separate facilities shall be provided for teaching the different groups of subjects. For example, in the department of anatomy there must be a dissecting room and one or more laboratories in which histology, embryology and biology may be taught. In the department of physiology there must be one or more laboratories for practical physiology, chemistry, toxicology and pharmacy. In the department of pathology there must be facilities for making post-mortem examinations and there must be a well equipped laboratory for giving instruction in pathologic histology. In the department of hygiene there must be a laboratory for bacteriology and for teaching certain parts of meat and milk inspection. In the department of surgery there must be ample facilities for clinical and for practical instruction. In the department of medicine there must be opportunity for clinical instruction and for laboratory instruction as well, in relation to clinical examination and the newer and more scientific methods of diagnosis. In the department of animal engineering there must be a laboratory and work room where students may be drilled in the examination and classification of food

stuffs, and of the various animal products, and in the study and tabulation of pedigrees. In connection with hippology a collection of the various kinds of harness, bits, saddles, etc., together with facilities for adjusting and for illustrating the usefulness of the various constructions. In teaching the breeds of animals, the principles of breeding, judging animals, stock farm management, etc., it is difficult to see how the work can be done properly without the use of a well equipped stock and dairy farm.

There must also be a well equipped library and each of the departments will need to have its own museum collection.

Without going into the details of the physical arrangement and the cost of such an equipment, which would depend largely upon local conditions, it may be said that the total cost could scarcely fall below \$350,000. The cost of maintaining such an equipment and of supplying the various material needed for class instruction would amount, upon a minimum basis, to \$33,000 a year. This amount added to the teachers' salaries makes a total of \$75,000 a year as the least cost of maintaining an adequate veterinary school.

3. THE STUDENT BODY.

In order that the teaching that is here outlined may be taken advantage of, it is necessary that the students shall come to the school as well prepared educationally as are the students entering upon other lines of scientific work of college or university grade. The general standard for students entering upon work in medicine, law, engineering, agriculture, etc., throughout the United States, is the equivalent of a high school course covering four years. It would appear that such a standard might properly be accepted in this connection. If the standard of admission were lower, the grade of the work of the school would be cast upon too low a plane. If the standard were higher, it would be too far in advance of the generally accepted standard for technical colleges in this country.

The duration of the course of instruction should be four years of nine months each.

It appears, then, that a veterinary school must have an equipment that cannot be provided for less than \$350,000, and that it must have a budget of at least \$75,000 a year if it is to be prepared to teach the veterinary sciences as thoroughly as is required by the needs of the public and the student. Such a school could teach 200 to 300 students.

At first sight, these estimates may seem to be large because, in this country, veterinary education has never been organized on anything like an adequate basis, and we have naturally fallen in the way of judging the subject by what we have, rather than by what is needed. If it is agreed that all of the subjects enumerated are necessary in the equipment of a modern veterinarian—a man prepared to meet satisfactorily the technical demands that properly fall upon the veterinarian of the present day—and if it is admitted that teachers cannot be compensated for the services required of them at salaries less than those stated, and that the material equipment described cannot be restricted excepting at the cost of efficiency, then it must be admitted that the total estimate is a minimum estimate of the cost of equipping and maintaining an adequate veterinary school.

By using this outline as a standard, one can determine to what extent the best of the American veterinary schools falls short of what is actually needed. In making such a comparison, however, it should not be based alone upon the budget of the school it is desired to measure, but rather upon the facilities for instruction and upon the actual grade of the work done, as compared with the work one could fairly expect from an institution organized in accord with the above outline. The reason for this is that some of our American veterinary schools are blessed by having among their teachers men who receive small salaries, or no salaries, but who work as faithfully and as diligently and as effectively as though they were receiving adequate compensation for their services. A man who does this contributes to the school, in effect, the amount equivalent to the difference between what he receives for his services and what they are

worth. There are veterinarians, with the zeal of missionaries, who, in this way, contribute annually from \$500 to \$2,500 worth of services to the institution with which they are connected. If institutions are compared by their budgets, the value of contributions in service must not be omitted from the total of the income and disbursements of the institution.

The standard for a veterinary school as outlined is similar to the standard in most of the countries of continental Europe. Many of the European schools, however, have equipments far larger than the equipment here outlined, and their incomes are also much greater than here proposed. The equipment of the schools at Berlin, Hanover, Munich, Dresden, Buda Pesth, Vienna and Alfort could not be duplicated in this country at an expense of less than \$1,000,000 to \$1,500,000. If European countries have found, after a century of experience, that these expenditures are justified, and they must have found that they are justified, because they are continually being increased, there can remain no doubt that similar expenditures in this country would be completely justified by the results they would render possible.

An argument of this sort is frequently met by the statement that one must not expect too much, for "the veterinary sciences are young in this country," and that we cannot be expected to have as complete institutions for promoting these sciences as exist where they are older. Such a statement is based upon a misconception of the facts. Science is international, it knows no political boundaries. The discovery of the tubercle bacillus is as old in the United States as in Germany, where the discovery was made. The facts of anatomy, of physiology and pathology are as old here as in their original homes, and so with all of the elements that enter into the complex group of veterinary sciences. And since this is true of the parts, it is true of the whole. The veterinary sciences are of the same age in this country as everywhere else upon the earth. It is only the public recognition of the value of the veterinary sciences that

is young and immature. Closer attention, in the light of the above statement, will show that while the veterinary sciences in this country have the appearance of having the immature stature of a boy, in reality they are comparable to an illy nourished dwarfed old man. The veterinary sciences do not lack age—they lack development.

THE RELATION OF THE QUALITY OF THE FACILITIES FOR VETERINARY EDUCATION TO THE STATUS OF THE VETERINARY PROFESSION.

In the long run, veterinarians will find themselves occupying the fields that they are better fitted to occupy than are men trained in other lines and in other schools. The future of the veterinary profession in the United States, as elsewhere, depends upon the ability of veterinarians to render useful and needed service. If veterinarians aspire to any given field of work, it is necessary that they shall be the best equipped to occupy that field.

It is illuminating but, at the same time, depressing to run over the list of the seven departments of veterinary sciences, as given above, and inquire, as we proceed, how many American veterinarians are entitled to high rank in these various departments or their subdivisions. For example, in pathology, a subject that underlies medicine, as anatomy underlies surgery, how many veterinarians in the United States are entitled to high rank? This field is the most important within the whole domain of the veterinary sciences, it is the one upon which the most typical and most important of our veterinary work pivots. The post-mortem work of the meat inspector is applied pathology, the diagnosis and treatment of diseases depend upon knowledge of pathology, the knowledge necessary for the recognition and control of animal plagues depends principally upon a solid foundation of pathology.

If we search for the leading men in the bacteriology of the diseases of animals, how many do we find in the ranks of the veterinary profession?

Where do we find the most complete, the most reliable and the most practical knowledge of the principles and practice of animal nutrition, a department of comparative or veterinary physiology?

Where do we find expert knowledge and professional skill upon subjects pertaining to animal husbandry and who are the recognized authorities in this field?

If a National meeting is called for a scientific discussion of milk and dairy inspection, what percentage of the authorities on these subjects rank as veterinarians? If one searches the literature for the solid facts upon the bacteriological, microscopic and chemical investigations of the milk supply, how many veterinarians does he find among the authorities of the first rank? If one wishes the best instruction in this field, would he go to a veterinary college—if so, to what one? Or would he go to a school in dairying in connection with an agricultural college?

In meat inspection the veterinary profession is confronted by one of the most important crises in its history. The federal government has increased its system of meat inspection until it now costs about \$3,000,000 a year. The federal meat inspection service covers less than one-half of the meat supply of the United States. The larger part of the meat supply is under very little inspection. A few States and municipalities have organized, somewhat tentatively, small meat inspection services. In many places the authority of the veterinarian in this work is not recognized, and men of little or no training are appointed to occupy positions as meat inspectors. This means that the local meat inspection work will give unsatisfactory results and that it will not develop as it should. The failure of local meat inspection services "to make good" and to develop will, inevitably, have an effect that is not commonly appreciated upon the federal meat inspection service.

The cost of the federal meat inspection service is paid by the individual citizens of the United States; the cost of the State and municipal meat inspection service is paid by the same

individual citizens of the United States. To say that one is paid by the national government and the other by the State and municipal governments is to establish a distinction that is not real, for, in the end, all taxes, whether general or local, are paid by the people of the country.

Pennsylvania has about one-twelfth of the population of the United States; therefore one-twelfth of the cost of the federal meat inspection service, \$250,000 a year, is paid by the people of Pennsylvania. The people residing in other States pay their share of the cost of the federal meat inspection service in similar proportion.

How can a given community, or a given individual, be expected to continue indefinitely to pay for the inspection of a part of the meat supply, and to ignore the inspection of the remaining part? The individual, the community and the groups of individuals and communities that make up the nation must ultimately depart from such an illogical position and come to the conclusion that meat inspection *is worth having or that it is not worth having*. If it is worth having, then all of the meat must be inspected. If it is not worth having, there is no reason why that part of the supply that is prepared in one state for sale in another shall be inspected and the inspection of the remaining part ignored. This means that local meat inspection services must be developed to take care of the inspection of that part of the supply that is not inspected by the agents of the federal government, or, if this is not worth while, then it is not worth while to continue to spend large sums for the maintenance of the federal meat inspection service. In other words, municipal, state and federal meat inspection services must prove their worth and be developed together, or they must fall together. To those of us who believe that meat inspection is of large sanitary importance there can be no more important task than to assist in the development, along proper lines, of local meat inspection services. If such local meat inspection services are placed in incompetent hands and are developed

along improper lines, or are not developed at all, then the end of the federal meat inspection service is ordained.

The federal government has placed all positions of independent responsibility in the meat inspection service in the hands of veterinarians, but it has engaged for duty in certain parts of the service a large number of men who are not veterinarians, but who are taken from the ranks of practical butchers. To these men it has given the title of *meat inspector*, in contradistinction to their superiors in office, who are known as *veterinary inspectors*. This new classification and nomenclature has led to much confusion on the part of the public. There is in some places a common, and natural, impression to the effect that the meat inspection work of the government is no longer conducted by veterinarians—for are not “meat inspectors” laymen? It is not recognized that the officials termed “meat inspector” are really meat inspectors, only in the most limited sense, and that the most important technical work of meat inspection is not done by the so-called meat inspectors, but by the veterinary inspectors. In order that the confusion on this point, which is widespread, and which threatens to lead to serious consequences, may be removed, it is important that the officials termed “meat inspector” shall be given some other and less confusing title—“assistant to the veterinary inspector,” “meat classifier,” or “grader of meats.”

Localities organizing meat inspection services cannot be expected to recognize the fine distinction under the present federal nomenclature, between the office of veterinary inspector and meat inspector, and thus the organization of local services on proper lines is hampered.

On the other hand, the veterinary schools must prepare men not only for the most important part of the work of meat inspection—that based on a knowledge of pathology—but for every possible subdivision of the whole meat inspection field.

The subject of dairy inspection is coming rapidly to the fore. There is likely, in the near future, to be as much and, very likely,

more, development in the line of dairy inspection as in meat inspection. Among veterinarians it is commonly accepted that the sanitary supervision of dairy farms and herds is naturally veterinary work. There is much to be said in favor of this view. Wholesome milk depends, in the first instance, upon the health of the cows that produce it, and upon the sanitation of their surroundings. So far as the health of the cattle is concerned, veterinarians are, of course, the natural experts, but in relation to the sanitation of dairy premises there is much difference in opinion and veterinarians are not commonly accepted as the authorities in this field. The training that veterinarians receive in hygiene, their knowledge of bacteriology of milk and of the sanitary sciences, ought to make them as conclusively authorities in dairy farm sanitation as they are with regard to the health of dairy cattle. But that this is not recognized is shown by the fact that under the recently developed plan for the sanitary inspection of the farms and herds producing milk for New York City (this inspection is to cost \$160,000 a year) there is no special provision for the employment of veterinarians, and, unless the plan has recently been materially revised, very few veterinarians will be employed in this work. These inspectors are to be practical dairymen and men trained in dairy schools.

This important and rapidly developing field can be occupied by veterinarians only when it can be shown that men are thoroughly trained in veterinary schools in work of this character, and when it can be shown that the training in this line that is given in veterinary schools is more complete and furnishes a technical equipment of higher quality than may elsewhere be obtained. In other words, if the veterinary profession is to be given this work to do, the schools must greatly strengthen their courses in dairy farm sanitation and in milk hygiene.

Much might be said as to the outlook for veterinary work in many lines related to "animal husbandry." There is much to be done in the development of the animal husbandry of the United States that involves profound veterinary knowledge, but, in order

that men trained as veterinarians may be given an opportunity to exercise their veterinary knowledge in this field, it is a prerequisite that they shall have as complete training along animal husbandry lines as is furnished in the best agricultural colleges.

It is a trite saying that "a stream can rise no higher than its source," and, unquestionably, this is true in relation to the professions. No profession can rise higher than the schools in which its members are trained, as these are the sources of the special knowledge, the grasp and the ideals of the profession.

So long as men must go to institutions other than veterinary colleges to obtain the best attainable training in many of the fundamental subjects that enter into the veterinary sciences, the veterinary profession cannot be said to have a very secure hold on its field, and it cannot advance as it should. Moreover, it is in constant danger of losing part of the ground that it has already occupied. If the veterinary profession is to rank with other learned professions, the average of intelligence and of professional knowledge must be as high as the average intelligence and professional knowledge in the other professions. This means that the schools must be as good as the schools of medicine, law, engineering and agriculture.

We must have good facilities for teaching men, unless we are to be satisfied with a lower standard for our profession than the standard that prevails in other professions. Such facilities cannot be provided without means. The amount of money that is required to equip and maintain a veterinary school on a basis equivalent to that of other professional and technical schools has already been indicated. The next question is how may this money be obtained? It is manifest that it cannot be obtained from tuition fees. A veterinary college maintained wholly by the fees of its students may do excellent work so far as it goes, but its field will ultimately be limited by what the students can afford to pay for. It has been found by experience that schools of medicine, law, engineering and agriculture, etc., and the general scientific and classical courses of the colleges

and the universities of the country cannot be sustained by tuition fees alone. Higher education cannot be self-supporting. The college of medicine, for example, that is subsisted entirely by students' fees cannot do its duty to its students. It cannot adequately train men for the responsibilities of the present-day physician.

I have in mind a medical college that is carefully and economically administered, that has 500 students, each paying an annual tuition fee of \$200. This college receives the services of a large number of capable men at a minimum salary, in addition to specialists who devote all of their time to the college, and who are well paid. But the tuition fees fail to equal the current expenses of the college by from \$25,000 to \$35,000 a year.

Colleges of agriculture in the various states receive public funds for current expenses amounting to from \$40,000 to \$200,000 a year.

In the past, and to some extent now, unendowed veterinary colleges have given to their students much more than the students have paid for, through the public spirited, generous contributions of time and effort by the teachers; but this sort of self-sacrifice cannot be expected to continue indefinitely. In the long run the efficiency of a school will be in more or less direct proportion to the income of the school.

Institutions of higher education in the United States derive their income, in excess of tuition fees, from three sources: From gifts from individuals, from the public funds of the states in which they are located and from the federal treasury. Thus far, veterinary schools have not appealed very successfully to benevolent individuals. One veterinary college in an eastern state has received contributions from individuals amounting to about \$250,000. A newly planned veterinary college in a central state is said to have received a donation of \$200,000 to \$300,000 from a group of individuals interested in the live-stock and packing industries. Not much more than one-half mil-

lion dollars in all has, thus far, been received, or promised, to veterinary colleges from private sources.

A number of states have taken some part in the development and promotion of veterinary knowledge by making appropriations for the equipment and maintenance of veterinary schools. The state of Pennsylvania, during the past two years, has appropriated \$200,000 for the construction of a building for a veterinary school. The state of New York has appropriated \$150,000 for the construction of a building for a veterinary school. The State of Ohio has appropriated \$60,000 for a similar purpose, and a few other states have appropriated smaller amounts. The State of New York appropriates \$30,000 annually for the support of the State Veterinary College. The State of Illinois has made a similar appropriation for this purpose. In addition to these, the states of Iowa, Washington and Colorado make small annual appropriations for the support of veterinary education. Some other states support a certain amount of veterinary work in their land-grant colleges, the funds for which come in part from the states themselves and in part from the federal government.

The federal government has done nothing directly for veterinary education. As has been stated, small appropriations of the federal funds donated to land-grant colleges have in some instances been used to support a limited amount of veterinary work. Such veterinary work, however, has, in most cases, been carried on in connection with agricultural experiment stations, or in courses arranged for agricultural students, and cannot, therefore, be regarded as of moment in relation to the education of veterinarians.

It is now seriously proposed to appropriate federal public funds for the support of branch agricultural colleges and agricultural and industrial academies or high schools in the various states of the union. This project, while it is young, has acquired considerable headway and is being strongly supported.

The development of veterinary knowledge is of such immense importance to the United States that the veterinary

profession is fully justified in asking Congress to include it in this scheme and to appropriate money for the support of veterinary schools. The losses from the diseases of animals that ought to be prevented, and that we may reasonably expect to prevent in the future, amount to from \$150,000,000 to \$200,000,000 a year. Less than one per centum of this annual loss would be ample to support all the veterinary schools needed in the United States.

Appropriations by Congress for this purpose should be so bestowed as to render the largest possible service to the country. To make an appropriation of \$10,000 or \$20,000 to each state would be equivalent to fostering the establishment of a large number of inadequately equipped, insufficiently maintained veterinary schools, which would cheapen and injure the profession and retard proper development.

What we need in the United States is a sufficient number of schools of high class and not an excessive number of schools of low class.

In order that there may be some assurance that federal funds appropriated for this purpose would do the most good, it should be stipulated that anything given by the federal government for this purpose shall be matched by an equal sum from other sources, that is, from the state in which the school is located, or from benevolent individuals. If, therefore, a school were able to raise \$30,000 or \$40,000 a year from local sources, and if it should receive a similar amount from the federal government, it would then be in a position to do the kind of work that the veterinary profession so urgently needs.

In view of the needs of the country and of the tremendous value of veterinary education to all of the people, in view of the precedent that has been established for the use of federal funds for purposes similar to this (agriculture), and of the overflowing wealth of the national treasury, it ought to be possible, by concerted effort, to obtain help from that source.

Excepting in the case of a few institutions that are dishonest and that flagrantly violate the code of ethics, and that will be dealt with by the Association of Faculties, it is idle to talk of the inefficiency of the veterinary schools as they exist to-day. Most of them are as efficient as it is possible for them to be under existing circumstances.

The veterinary profession cannot reach the position of usefulness, importance and dignity that it should occupy until largely increased funds for educational purposes are supplied from some sources outside of the profession, and the most likely source is all of the people of the United States as represented by the *federal government*.

FROM PROF. VERANUS A. MOORE, of the New York State Veterinary College, we have received reprints of "The Control of Bovine Tuberculosis," read by him before the New York State Dairymen's Association, at Elmira, Dec., 1906; "The Agglutination Method of Diagnosis in the Control of Glanders," from the *Journal of Infectious Diseases*, and "Actinomycosis Mistaken for Tuberculosis at Post-Mortem following the Tuberculin Test," from the AMERICAN VETERINARY REVIEW, of May, 1906.

ALCOHOL AS AN ANTIDOTE TO CARBOLIC ACID POISONING.—*New York, Aug. 26.*—*The New York American* says to-day: "Dr. Seneca D. Powell, whose name will go down in the history of medicine as martyr to science, lies dead in his home at Greenwich, Conn., as the result of constant drinking of carbolic acid for three years to prove that pure alcohol is an antidote for the poison. It was about three years ago that he determined to find some substance that would cause carbolic acid to lose its terrors. He conceived the idea of pure alcohol being an antidote. Dr. Powell drank some carbolic acid. What he suffered none except himself could tell. Then came the crucial moment, the moment when his hopes would be shattered or science enriched. He drank the pure alcohol and in a few moments was in his normal physical state. Not content with his initial test, he continued with others, taking larger quantities. He demonstrated before medical societies for three years. Nature rebelled at last. The poison which had been saturating his system conquered."

JOHN SMITH AND HIS MISFORTUNES.

BY A. LIAUTARD, M. D., V. M., PARIS, FRANCE.

Presented to the 44th Annual Meeting of the American Veterinary Medical Association, at Kansas City, Mo., Sept. 10-13, 1907.

Mr. President and Gentlemen:

Doctor R. P. Lyman, your worthy Secretary, is a very dangerous man!

I do not believe you could select among all your membership one, who could equal him in making anyone do just the contrary of what one intended. His powers of persuasion, his talent of conviction, and his sweet and gentlemanly way in making a request, are some of the reasons that I present myself before you to-day.

In December last he wrote me, asking if I would be willing to contribute some kind of a communication of my choice. In my answer, I expressed my desire and regretted my inability to be present, and while telling him of my warm wishes for as great success as in the meetings of previous years, I closed my letter declining to contribute a paper, because probably the only subject I would care to write about would be one upon which the members of this association would be justified in objecting, as having heard me already time and time again. I thought it was all understood, when in February last the Doctor wrote to me again and—well, I promised, and, to punish him, I have accepted his kind offer of presenting you to-day the following pages on

John Smith and His Misfortunes.

I hope that in this undertaking I will not tire you unnecessarily, that the Doctor will not have to regret too much having asked me to contribute, and that the manner in which I will consider the subject may command your approval and your support.

I will be as concise as possible.

It is the story of a recent graduate that I beg of you to listen to. A story that might possibly be that of one of your family, that of a son, a nephew or perhaps a close relation, or again perhaps only that of an intimate friend.

If you will allow me the supposition and entertain it, I feel quite sure that I will secure your earnest attention and no doubt your sympathy and your powerful influence!

This young graduate, whoever he is, whom I will call John Smith, has gone to a veterinary college—he has worked hard—he knows the sacrifices you, his parents, have made for him—he appreciates his obligations, and, while he is proud and full of the great joy that his successes give him, he is also happy that he can come back to you with his diploma. The ambition of his several years of serious work at college is realized and he is happy also of the pride that he will read in your eyes, when he shows you the hard-earned parchment.

And, now, he is entitled to a little rest. He has studied hard, he has perhaps passed many half nights bent over his books, reading and reading again; his dreams have been full of medical subjects of all kinds; his poor brain is all shaken; his nerves are overstretched; his resisting power is overtaxed; he must have a rest! But after laying aside for a while books and notes, soon the question comes to him, "*Now, what shall I do?*"

Three roads are open to him: that of the general practitioner, that of the specialty of sanitarian, that of army veterinarian. He is a regular member of the profession; he can have access to all.

He will enter the first.

Perhaps his father or some other relation is already in practice. They have met with success. They are getting old; he may succeed as well. It is a good opportunity. There is but a little formality to comply with, a license to obtain.

That formality is of no account, if there is no law protecting the profession and the practice of veterinary medicine in the State where he intends to begin and take his chances.

But if there is a law, he must comply with it. He is referred first to the Board of Veterinary Examiners.

What? A Board of Examiners!

But he has just been before one and before one which meant business, one where there were specialists on the various branches of veterinary medicine—anatomy, physiology, theory and practice, surgery, obstetrics, etc., etc.—and now, he must go before three or four or five men, who constitute, by law, the Board of Veterinary Examiners, and he must submit to another examination, which will have the pretension of being similar to the one he has passed but a short while ago, and will claim the right to say whether he is or is not allowed to register—that is, to practice.

But, I have *my diploma!* he exclaims. It is signed by all of my teachers. It is perhaps signed by the Chancellor of a university. It matters not. The Board of Examiners does not care for his diploma. They do not even look at it. The law does not say they have to!

Well, the law is the law. He has to submit to it, as all good citizens do, and, *behold*, at that examination by the Board of Examiners, which is probably not even equal to a college quiz, he fails in passing it satisfactorily. Has the examination been too hard? the questions too difficult? have there been any other reasons? No matter, he is plucked; that is all he knows, and he cannot complain as the Board allows him, with a kind of sarcastic generosity, six months to prepare himself for another trial.

There is, however, also the case when he is successful, and when the Board grants the authorization to register and obtain a license.

Still, what has his diploma been good for?

However, he starts practice, either with some practitioner already registered or by himself. But beginnings are hard. He is a new man, who has to fight against an old established *confrère*. His chances are not what he thought they were, and

finally he decides to give up the place and try somewhere else. He packs up his goods and starts for another State.

Here again the same condition faces him.

Some time has elapsed since he received his degree, and yet it is either settling in a State where there is no law or in one where there is a Board of Examiners, and here again it is another examination. The license that he has fought for is useless; the Board does not recognize it. And it is for the poor graduate another quiz. Yes, provided he is not stopped before starting. By what? By the fact that the requirements of the school from which he has graduated do not comply with those demanded from veterinary students in that State.

To resume the position of John Smith. His diploma is of no use to him, as with it he can only settle in a State where there is no law to protect him, or if he wishes to go into a State where there is one, he has to run the chance of passing, that of being rejected and sent back to six months, or to be refused examination altogether. Fortunately, this last occurs in only one State in the Union. That is even too much.

Of his diploma, not a word has been said! It is a useless evidence of his capacity. He cannot benefit by the advantages which it is claimed to grant him, although given by a school in good standing, after years of attendance as required by law, and after an examination on all the branches of veterinary medicine. Notwithstanding all those, there is but one door open to him, the one which will send him to a State where his profession is not protected.

Can you be surprised if then he gives up the idea of following the road of his first desire, where he might have done such amount of good, and to hear him say: I will try the road of the Sanitarian. Perhaps I will succeed better!

The road of the Sanitarian is for holders of Government positions, such as those of the staff of the Bureau of Animal Industry, and therefore is accessible only under some special conditions, namely, an examination before the United States Civil Service Commission.

Our friend, John Smith, wrote to the proper authorities asking for information, as to the requirements and conditions of this examination, as long as he was not yet through with being examined.

He soon received a lot of papers with some special instructions, which were to be filled out, and a special one informing him that an examination was to be held on a given date and place. A Manual of Examinations had also been sent and the requirements of the examination were found in Section 213 of the same.

Strange to remark, nothing was said of the diploma that the candidate might have, except that the applicant must be a graduate of a veterinary college.

The *official* requirements are known to all of us, and John Smith knew them also.

Spelling, arithmetic, letter writing, penmanship, copying from plain copy! That is nothing. John Smith is a bachelor of sciences, he has a certificate of high studies or perhaps only a common school education which permitted him to matriculate in a veterinary school; therefore, he could take that test without trouble. It is true there were also questions on veterinary anatomy and physiology, on veterinary pathology and meat inspection, on theory and practice of veterinary medicine, but his diploma would certainly vouch for him then, or perhaps his license, for which he has passed an examination. Error; these were of no use to him. Examination before the Board of the Civil Service Commission had to be passed, not only on these indicated subjects, but on others, as he has heard, although not officially, that special sets of questions were asked relating to sanitary science and sanitary police, sanitary pathology and medicine, meat inspection, microscopy and microbiology, on meat inspection laws and regulations, etc., etc.

Of course, then, his diploma is of no use to him, and whether he has been to a government school or to a private college, his chances of successfully passing were very slim, and that ex-

plains well the notice, which in the Manual reads: *The supply of eligibles for the position has not been equal to the demand.*

Yet, John Smith has the good luck to be admitted. But we may ask: *How?* If we take into consideration the fact that the branches pertaining to the special questions and which are not mentioned in the Manual at Section 213, are taught out of twenty schools in the country in the following deficient manner: Bacteriology in 15 schools, histology in 13, meat inspection in 12, sanitary medicine (laws and regulations) in 8, dairy inspection in 2, and biology in ONE. These figures are gathered from Prof. Williams' article on "Veterinary Education in America."

John Smith is Veterinary Inspector of the Bureau of Animal Industry, but he cannot be a permanent appointee until he has been probated for six months. It is the law. It is the rule. Never mind, after that time he will have a position for life. And until he is a permanently appointed man the wheel of fortune will keep on rolling. He, however, renounces this good opportunity, and will try the third and last road—*The Army.*

Before starting to obtain information as to what he must do to get a situation, he thought of writing to a friend, a school-mate, who had attempted to enter the Army. The answer he received was far from being encouraging. Yet he thought he would try and apply.

The requirements necessary for entrance into the Veterinary Service of the Army are laid down in the paper that Dr. C. H. Jewell, Veterinarian to the 13th Cavalry, read at the meeting in New Haven last year. They are as follows:

"The applicant shall pass a physical examination and come
"up to the standard required of a recruit. He shall be a gradu-
"ate of a recognized veterinary college having a three-year
"course, with at least a six months' session each year. He
"must furnish evidence of a good moral character and apti-
"tude for the service, the latter to be judged by the board of

“officers appointed to examine him, and he is obliged to pass “above sixty-five per cent. in each of the following subjects: “English, including reading, spelling and grammar, American “history, geography and arithmetic. This makes up the basic “examination. The professional examination consists of the following: Anatomy, physiology, materia medica, practice of “medicine, sanitary medicine, surgery, meat inspection, pathology, feeding and watering, bitting and saddling, horse shoeing, conformation and soundness. This examination covers “a period of *eight* days and is most thorough in its nature.”

Taking into consideration the very little prospects that the position of Army Veterinarian offers after all, and with everlasting threats of examinations and examinations again, John Smith thinks it is too much, and gives up the idea.

* * *

Three different openings for which several years of hard studies had been spent in preparation, for which a diploma has been won after severe struggles, and when a knock is made at the door of each of these openings, with diploma in hand, it is ignored, and the door remains almost closed. It has been useless.

We thought it the highest proof we could get of our thorough knowledge of every branch of the profession of our choice, excepting that we might be deficient in some specialties, and willing to prepare ourselves for them. But no, our diploma is worthless or the examinations that are asked of us, regular graduate of a school in good standing, are improper, vexatious and uncalled-for. Who knows if someone might not suggest that the unsuccessful result announced, may not have been the conclusion of personal feelings more than ignorance on our part!

To resume, what does John Smith complain of and what does he ask?

That his diploma should not be a dead letter and should be accepted by the various boards, before which he has been obliged

to present himself, as an evidence of his professional qualifications.

He asks that the Board of Veterinary Examiners, who alone can give him the authorization of registering and getting a license, accept his diploma and not oblige him to submit to an examination, which in its results can be but a comedy or an insult to the professional respectability of the signers of the diploma, of the teachers that have put their names to it!

He asks that the same should be for his admission for veterinary inspectorship in the Bureau of Animal Industry and also in the Army, excepting of course the obligations of a special examination on some special subjects which relate to these special positions, examinations to which the candidate must prepare himself in or out of the veterinary colleges, in a special course of instruction in these branches.

He asks that his knowledge in anatomy, physiology, theory and practice, surgery, obstetrics, therapeutics, etc., etc., all the branches constituting a veterinary curriculum, be recognized by the exhibition of his diploma and that examinations on those subjects be eradicated from the program of the various boards, where they are at present demanded—namely, Veterinary Boards of Examiners, Board for Veterinary Inspectorship of the Bureau of Animal Industry, Board for Admission in the Army!

Will the American Veterinary Medical Association stand by John Smith? Will she protect him as well as all future generations of veterinarians that may come after him?

Gentlemen, do we ask impossibilities?

We think not. The fault of our failures and the cause for our complaint is not with the boards that, at first, I am sure you think I am attacking. I do not!

These boards are in their proper place. Their work is good. Their demands even are just. If they did not exist they ought to be created. And if in every one we read a request of an examination of the various departments and sub-departments of

veterinary medicine, it is not possible for them to do otherwise. It is not because they wish to ignore our diplomas. It is not because they desire to insult the men who, so many of them, work so generously for the profession without remuneration. What is wrong is the organization of the schools, the admission, the attendance, the division of the curriculum, the length of studies, the requirements for graduation, etc.

Are we to be surprised to hear Dr. Jewell say in answer to Prof. Harger: "I would say that there are many veterinary colleges whose graduates are not competent to take the examination. There is a class of men who come from the *better colleges*, who seem to be deficient in their English education "or who have never prepared themselves sufficiently in it. . ."

And are we to wonder that at the examination for sanitary inspector, the candidate has to pass on spelling, arithmetic, letter-writing, penmanship, etc., etc., when we read the requirements of admission for matriculation in the various announcements of the veterinary colleges of North America or in the articles that appear in our periodicals on the subject? Have a high standard of matriculation similar to that asked in some of our colleges and there will be no more reason for Dr. Jewell's remarks nor for the requirements of the Civil Service Commission.

And if the State Boards of Examiners have also demanded the examination, it is, I believe, to a certain extent, to comply with the law, but principally because they were unable to distinguish between diplomas, between the one to accept and the one to refuse or ignore. They then ignore all. I think, however, that now this question is somewhat settled by the second recommendation of the Committee of Intelligence and Education, made at New Haven, which says: "That graduates of the following schools shall be considered *eligible* to membership in the A. V. M. Association, New York State Veterinary College, University of Pennsylvania (Veterinary Department), New York-American Veterinary College, Laval Uni-

versity (Veterinary Department), Chicago Veterinary College, McKillip Veterinary College, San Francisco Veterinary College, Kansas City Veterinary College, Ohio State University (Veterinary Department), Washington State College (Veterinary Department), Iowa State College (Veterinary Department), Cincinnati Veterinary College." If the A. V. M. Association recognizes the graduates of those institutions as eligible, why should not their diplomas be accepted by the various boards of examiners we have been speaking of?

I am sure that for you with a diploma from either of these schools, our friend, John Smith, would not have had need to pass any more examinations as the one asked of him.

But truly, can we wonder that our diplomas do not command the respect they should, and do not carry the weight they ought when we read the arrangement of the curricula of the numerous schools, and when we see the varieties that they present. Subjects that are taught here, poorly there, and not at all in others!

Is it not but to be expected for the officers of the Bureau of Animal Industry to say: *The supply of eligibles for the position has not been equal to the demand*, when we find that the essential branches pertaining to veterinary sanitary science are taught so imperfectly in *seven* schools and ignored in *thirteen* out of *twenty*!

Having endeavored to point out the lack of respectability granted to our diplomas; having also pointed out to you that which can be considered as the cause—viz., the peculiar conditions of the schools, I may, in closing, refer you in a few words to some of the summaries of the reports of the Committee on Intelligence and Education. In 1905 Dr. C. J. Marshall, Chairman, said: "The officials or representatives of the various veterinary institutions propose as a solution of the educational problem, Section 4, Uniform Entrance Requirements." To which, as I said before, you will add, no doubt, must be those of high-school education as already existing in several schools. Section 5. A uniform curriculum, which, you can ap-

preciate, will permit you to obtain from the Board of Regents of University to alter the requirements that they exact in some States at present. Section 6, Uniform graduation requirements. Section 7, Uniform degree. In 1906, Dr. Marshall, again Chairman of the Committee on Intelligence and Education, again recommends: Section 8, that the Association encourage uniform entrance requirements, uniform curriculum, uniform examinations, uniform graduation and uniform degree.

It is two years since these recommendations were presented to your Association. The Association of Veterinary Faculties and Examining Boards has been organized; it has had time to prepare a plan by which something better than to leave them on paper could be made and render these recommendations active.

No doubt they will do justice to their duties.

Of course, it will be difficult! There will be, as there has been before, someone to object with Federal or State consideration, who will say that the examinations are regulated by Regents of Universities, as for instance, in the State of New York, and that to these regulations you have to submit. I know all that!

But, *remember your power, members of the A. V. M. Association!*

If all the schools of America have adopted a uniform length in the course of studies, because you demanded it, why should you have less power in obliging them to adopt your reforms on educational regulations, which will allow graduates of our schools to hold and be proud of a degree respected and recognized equally by all, and certified by an *American veterinary diploma*, and which would raise the profession in the estimation of the public at large as well as in that of the various institutions where veterinary services may be called for, and also among the other nations of the world!

THE KANSAS CITY VETERINARY COLLEGE opened its session September 18 with the enormous enrollment of 400 students.

DOURINE AND A FEW CONDITIONS SIMULATING IT.

By E. T. DAVISON, D. V. M.

United States Inspector, Department of Agriculture, Helena, Mont.

A Paper read before the Meeting of the Montana Veterinary Association, May 6, 1907.

I will not endeavor in this paper to give you an exhaustive treatise on dourine and allied affections, nor will I attempt a lengthy dissertation along etiological or pathological lines. To define it in the words of Law as "a contagious affection of solipeds, transmitted by copulation, and attended by specific lesions in the generative organs and the nervous system, such as local venereal swellings, cancrus ulcers and cicatrices, dementia and paralysis," and to merely mention that while the wizards are not unanimous in their belief as to what the causative agent is, the preponderance of evidence would seem to indicate that dourine is due to a protozoon, *Trypanosoma equiperdum*, will suffice for the purposes of this paper. The research work done by Lingard and other scientists would seem to demonstrate beyond all reasonable doubt that the *T. equiperdum* is the causative agent. However, as before stated, I will not take up in detail the etiology and pathology of the disease. I assume that you are all familiar with the literature on the subject, but should you not be, you have only to refer to one of our numerous authorities, some of whom never saw a case, and whose research work has been principally confined to compiling from other authorities who have had like facilities for acquiring information on the subject.

An orthodox case of dourine is usually characterized, first, by ulceration and swelling of the genitalia and a vaginal or urethral discharge; second, by the development of the skin plaques; third, by depigmentation which may appear about the lips and nose, around the eyes, about the sheath, scrotum or inside the thighs, and, fourth and lastly, by paralysis, which gradually becomes more pronounced and intensified as the disease progresses. The manifestation of the above symptoms in the order men-

tioned would constitute an orthodox case of dourine. One that would come up to text-book requirements. Unfortunately for the diagnostitian, however, only a small percentage of cases can be placed in the orthodox column. An animal may die of dourine and only one or two of the above enumerated symptoms be in evidence. On the other hand, we have many affections on this continent which in the course of their development manifest one or more of the above mentioned symptoms. And, in a section where dourine is known to exist, it is not always easy to determine whether or not suspicious symptoms are due to dourine or some benign affection. The more care we exercise in differentiating between dourine and the various conditions which simulate it, the less slaughtering we will do. In some quarters it seems to be the policy of the authorities to attribute every departure from the normal of the equine genitalia as being due to dourine, depigmentation or leucodermic patches alone being accepted as *prima facie* evidence of disease. This, in the face of the fact that depigmentation, both local and general, may be due to any one of a half-dozen causes. Even the unassuming gelding and the unbred filly do not escape the eradication scourge of the energetic eradicators.

Of the many conditions supposed to be dourine that I have been called upon to investigate, coital exanthema and bursatti have furnished the most cases. Where authentic history can be obtained, coital exanthema need never be mistaken for dourine. Although this is an acute infectious disease and nearly always communicated by copulation, the period of incubation is only one to five days, whereas in dourine it is much longer. The ulcers which appear on the vulva and vaginal mucosae and on the penis are at first small, numerous, superficial and involving very little of the subcutaneous structures, show a disposition to heal rapidly under ordinary antiseptic treatment or no treatment at all in fact. The ulcers of dourine are few in number, deep and indolent, do not show any disposition to heal rapidly and the cicatrix resulting from healing frequently causes a distortion of the organ. The depigmentation resulting from the solu-

tion of continuity is permanent, while the depigmentation resulting from the vesicles of coital exanthema usually disappear in about six months to a year. The dourine and the coital exanthema cicatrix also differ in that the former has the greater amount of indurated scar tissue. An attack of coital exanthema is followed by no constitutional symptoms, while in the case of dourine a gradual deterioration of condition is the rule.

Bursatti, or summer sores, in certain localities, is quite common in fat plethoric stallions. Whether the summer sore or bursatti of this country and that of Southern Europe and North Africa is identical we do not know. On the Eastern Continent it has been demonstrated to be due to a small worm—the *Filaria irritans*. While the lesions are apparently the same, the filaria do not seem to be present. At any rate, their presence has not been demonstrated. That anyone would mistake an attack of summer sores for dourine might on first thought seem ridiculous. However, so good an authority as Maj. H. T. Pease, Principal of the Punjab Veterinary College, Lahore, India, in the last November issue of the *Journal of Tropical Veterinary Science*, states "That one species of filaria affecting the horse occasionally causes symptoms somewhat resembling dourine, especially in the stallion, and which may, in fact, if care be not taken, be mistaken for those of that affection." In describing a stallion affected, he furthermore states, "That there were also present on admission swelling of the sheath of an œdematous character and leucodermic patches on scrotum and sheath." Maj. Pease ought to be an authority. I should judge from reading the above-mentioned periodical that dourine in that country was common as colt distemper in this, and that the different varieties of trypanosomata in India are almost as numerous as breakfast foods in the United States.

In my investigation work I have examined dourine suspects in Columbus, Ohio, Hebron, N. D., various points in Nebraska, Boise, Lewiston, and Weiser, Idaho, and found the animals suffering from nothing any more than complicated sum-

mer sores. A frequent site for the development of the lesion is on the inside of the hind legs. The stallion in lying down will bring the sheath or penis in contact with the sore and the development of a deep angry ulcer on sheath or penis with consequent urethral infection and discharge is the result. Depigmentation resulting from the irritation caused by these ulcers is quite extensive and permanent, so also is the cicatrix resulting from the healing of the abrasion. Previous to the eruption of the bursatti lesion a skin plaque will develop. The following description by Maj. Pease is good: "The character of the patches does not serve to afford a certain diagnosis, as in some cases of dourine similar ones appear. They are usually large, often three or four inches in diameter, but at others about the size of a crown piece. They are generally œdematous and generally well raised above the surrounding skin and having a rounded contour. They are irregular in shape as a rule. They contain a considerable amount of serosity, generally colorless, which in some cases exudes through the skin and runs down in the form of drops. The hair covering them is generally erect and the skin thicker than normal. They may persist for a variable time." The result of my observation has been that the bursatti plaque is very sensitive, the dourine plaque non-sensitive. If located where the horse can rub it, it soon becomes raw. This is a sequela not characteristic of the dourine plaque.

To enumerate all the conditions attended with a manifestation of one or more of the symptoms or lesions common to dourine would be placing too much of a strain on your good nature. I will merely enumerate a few common among our Western range horses.

Under cicatrices of vulva and vaginal mucosæ, we have the scars resulting from parturition tears, very common in old mares. Rectal parasites at times occasion an intolerable itching and animals endeavoring to get relief from scratching, frequently lacerate the vulva.

Under vaginal discharge we have coital exanthema and leucorrhœa. If our old Western range mares are examined early in

the spring, they will be found to be anæmic, the os uteri will be relaxed and in such cases a slight catarrhal vaginal discharge is almost universal. This nearly always abates with the advent of good feed later in the spring. In some instances, however, it becomes chronic.

The conditions that may occasion depigmentation, both local and general, are legion. Anything sufficiently irritating to cause an abrasion of the hairless black integument will result in its depigmentation. Among these are chafing, alkali dust, sun-scald or any kind of vesicular eruption. In the West, especially on the Indian reservations, there are a great many of the pinto strain of horses—a species of equine albino deficient in pigmentation. It is not always easy to determine whether the depigmentation in evidence in a certain case is natural or acquired. In many cases I have observed progressive depigmentation for which I could find no plausible explanation. It seemed to appear in much the same manner as the leucodermic areas so common in the *genus homo* and to occasion no more inconvenience.

Under paralytic symptoms, we have the old chronic swamp fever cases, the so-called loco and sage poisoning. The condition among ranchmen termed “poke-easy,” a sequela of distemper, chronic myelitis and on swampy range or pasture that at certain seasons of the year is inundated,* occasionally cases of thrombosis of the iliacs caused by invasion of the *Sclerostoma equinum* will be found.

A frequent complication in the gelding or stallion of paralysis from any cause, is an inability to retract the penis. This condition predisposes to traumatism and, incidentally, paraphimosis. I would not consider paralysis or paraphymosis of the penis alone as even a symptom of dourine.

In conclusion, I would state that if we accept a manifestation of the above enumerated symptoms as indicative of dourine, we can go to any hamlet on this continent where horses are raised and find it.

* The above condition has been verified by many post-mortems in Nebraska, S. Dakota and Montana.

In a locality where dourine is known to exist, any animal manifesting such symptoms may properly be regarded with suspicion until proven innocent; however, dourine does not develop spontaneously, and to accept such symptoms as proof positive of the existence of the disease is a virtual admission of a lamentable deficiency in the art of differential diagnosis.

A FOX TERRIER DOG was recently presented at the clinic of the Kansas City Veterinary College in which was observed a complete rupture of the external lateral ligament of the patella, allowing the patella to slip out of the groove to the inside. The case was of six weeks standing.

AMONG veterinarians from outside of the state in attendance upon the recent meeting of the New York State Veterinary Medical Society, we observed the following from Massachusetts: Drs. L. H. Howard, of Boston; Benj. D. Pierce, of Springfield; C. H. Perry, of Worcester, and W. M. Simpson, of Malden.

"NEDJRAN," one of the Arabian stallions imported by Homer Davenport, the cartoonist, has been sold to Miller Bros., of Ranch 101, of Oklahoma, and will be bred to a number of mares containing the blood of the thoroughbred and Western ranch horses. They have also purchased about 60 other Arabians from Mr. Davenport. "Nadjran" was exhibited at the Lewis and Clark Exposition of 1905 and there pronounced a perfect horse.

"IF THE REVIEW was \$30, I most certainly would not think of doing without it. I have gotten many things from its pages that have been inestimable to me and every issue comes with new ideas and new thoughts that are indeed worth very much to the busy practitioner. Thanking you again and again for past favors and extolling your noble efforts for the betterment and upbuilding of the profession, I am, G. L. MEHOLIN, D. V. S., *Fairfax, S. D.*"

KILLS HIMSELF FOR LOVE OF HIS HORSE.—*Des Moines, Ia., Aug. 28.*—Unable to bear the thought of separation from his favorite horse, G. A. Long, a prosperous Swedish farmer at Atlantic, killed the animal and then ended his own life. Long was an ardent lover of horseflesh. All his surplus cash went into fine stock and he particularly admired a horse for which he paid \$500. Recently the animal developed symptoms of glanders and Long thought he could never be cured.

PRJEVALSKY WILD HORSES.

BY W. REID BLAIR, D. V. S., NEW YORK.

On the eve of the horse's retirement (?) to a well-earned rest, and of his replacement by electricity and the motor vehicle, comes the discovery of a new horse and reawakened interest in his ancestry.

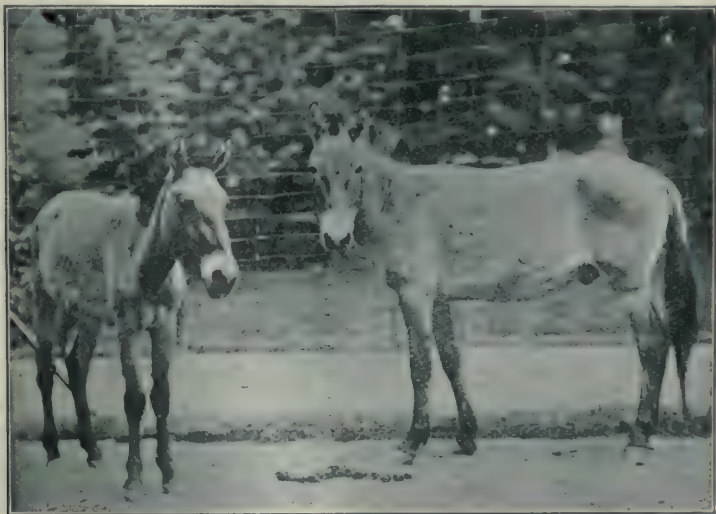
This new species of wild horse from Central Asia is a recent discovery of Prjevalsky, a Russian traveler, and has a great deal of interest in connection with the question of the origin of the domestic horse. Prjevalsky has made the scientific world acquainted with a horse hitherto unknown, inhabiting Central Asia, and possessing characteristics more closely approaching those of the domestic horse than any member of the *genus* heretofore discovered.

It was about twelve years ago that this Russian, while on one of his great journeys into Central Asia, discovered in the great Sungarian Desert, in Central Asia, between the Altai and Tianshan Mountains this new species of wild horse, and on his return brought back with him to St. Petersburg an example of the same, which has since been described and named in honor of its discoverer.

The Prjevalsky horse is the nearest approach among wild horses and zebras to the domestic horse of civilization and also supplies an important link in the chain of evolution which reaches down from the three-toed horse to the domestic animal of to-day. It should be remembered in this connection that the earliest known ancestors of the horse were small animals not larger than the domestic cat, with four complete toes on each forefoot and three on each hindfoot.

It is interesting to note that the ancestry of this family has been traced back nearly to the beginning of the Tertiary period, or Age of Mammals, without a single important break. Dur-

ing this long period of time, estimated at nearly three millions of years, these animals passed through important changes in all parts of the body, but especially in the teeth and feet, adapting them more and more perfectly to their particular environment. To-day we have a horse with a single toe, which represents that the third toe of its prehistoric ancestors and the second and fourth toes are represented by the slender *splint bones* situated on either side of the *metacarpel*, or so-called "cannon bone."



THE PRJEVALSKY HORSES AT NEW YORK ZOÖLOGICAL PARK.

In appearance, the Prjevalsky horse is somewhat smaller than the domestic horse. It also differs from the typical *Equus* in having a short, erect mane, and in having no forelock—that is, no bunch of hairs in front of the mane, falling down over the forehead. The long hairs of the tail, instead of commencing at the base, do not begin until about half-way down the tail. In this respect the Prjevalsky horse is intermediate between the true horse and the ass.

The whole general color is of a yellowish drab, paler and whiter beneath, and reddish on the head. The legs are reddish

to the knees and thence blackish to the hoofs. While it is of small stature, the legs, however, are thick and strong and the head is large and heavy. Owing to the remoteness of the region inhabited by this species and the fact that they keep to the wildest part of the desert, and are very hard to approach, its capture was rendered a matter of great difficulty and expense.

Five years ago Mr. Carl Hagenbeck, the great wild animal collector of Hamburg, Germany, who has furnished the Park with many of its most rare and valuable animals, received from the Duke of Bedford an order for several specimens, to be purchased, if captured, at \$5,000 per pair. On the strength of this order, Mr. Hagenbeck felt justified in sending out an expedition to capture a number of the animals desired. His agents penetrated to the northern border of the Gobi Desert, where they found themselves in the land of the Kirghiz, a tribe noted for its horses and expert horsemanship. Engaging the services of nearly two thousand Kirghiz horsemen, and taking with them fifty brood mares in foal, the collectors sought the desert home of the wild horse.

After a series of exciting adventures, Mr. Hagenbeck's agents succeeded in capturing fifty-two young colts of the wild horse species. These were nourished by the domestic mares that had been taken along for that purpose, and after a proper interval the outward march was begun. It took three months for the caravan to reach the Siberian Railway, and depart for Hamburg. During the journey twenty-eight of the wild colts succumbed, and only twenty-four reached Hamburg alive. The expedition was in the field nearly eighteen months, and its expense footed up nearly \$25,000.

After the collection reached Hamburg, all the animals save one pair were promptly disposed of. Twelve are now in the possession of the Duke of Bedford, and others are on exhibition in the Zoölogical Gardens of London, Berlin and Hamburg. The two horses now on exhibition in the Zoölogical Park are the only specimens that have reached America alive.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

A MULE WITH PERSISTENT SPONTANEOUS LACTATION.

By LOUIS FRIEDHEIM, V. S., Rock Hill, S. C.

The subject is a black mare mule, aged 10 years, which for the past five years has been giving milk in quantities vary-



ing from *one-half to three-quarters of a gallon twice a day*. This mule has for years and is now used for ordinary farm-work.

At times when the udder is not emptied, the milk will flow very freely of its own accord. While at work she often stops, so as to have milk withdrawn, making no objection to being handled, even by entire strangers.



The only history I can get of the case is that during an œstrum there was considerable swelling of the udder. The owner, thinking it due to an injury, examined the mammæ and found a considerable flow of milk. This was five years ago, since when she has been milked daily.

RUPTURE OF STOMACH IN A HORSE.

By F. C. HOSKINS, V. S., Newport, Ark.

Gray mare, weight about 1,200 lbs., used in a log team, was taken with colicky symptoms Aug. 15th inst. at 1 P. M., but did not roll much; would turn up her upper lip and continue to look around at side. I was called at 12 A. M. on the 16th, but was unable to reach her until 9 P. M. the same day, and I found my

patient standing and seeming to be in but little pain, with a temperature of 102, respiration 30, pulse 85 and very feeble; I was informed when I arrived that the owner thought she was choked, as she had refused all feed and water then for over twenty-four hours, and there was a continuous flow of saliva. Before making known my diagnosis, I introduced a stomach tube to prove to the owner that it was not a choke, and was unable to syphon any fluids from the stomach. So I announced that there was no hope for her; that her stomach was ruptured, and later offered her a pail of water, of which she drank a few swallows with difficulty, and it seemed to cause her considerable distress; and in a few hours death relieved the poor sufferer. Post-mortem revealed a five-inch tear in the pyloric portion of the stomach.

THE APPEARANCE OF LACTATION IN A MARE FOUR MONTHS BEFORE THE EXPIRATION OF THE NORMAL PERIOD OF PREGNANCY.—A four-year old Belgian mare was covered by a stallion on April 15, 1905. On November 19 of the same year, exactly four months before the date parturition should have taken place, the udders enlarged, followed by an intense flow of milk. The sudden activity of the functions of this gland gave rise to the suspicion that the foetus had died. As the mare did not exhibit any symptoms of indisposition succeeding this event, it was thought then that the foetus was undergoing the process of mummification, for if the foetus had decomposed it would have caused considerable constitutional disturbance in the mother. The udder remained enlarged and lactation continued. The most mysterious occurrence in the case was that the abdomen of the mare was steadily gaining in volume. The solution of this peculiar symptom was discovered when the mare suddenly and prematurely gave birth to a dead foal on February 15, 1906, five weeks prior to her full term of gestation. Simultaneously with the delivery of this almost mature foal, a mummified foetus was found in the placenta, leathery in appearance and about the size of a terrier. These circumstances tend to prove that the premature onset of lactation was induced by the death of the foetus. It was also remarkable in this case, apart from the relatively rare occurrence of a petrified foetus in a mare, that while twin-bearing, the death of one at a much earlier stage of foetal life had no sympathetic influence whatever on the life and development of the other.—(*Vet. Zimmermann, in Ber. Tier. Woch., March, 1907. Translated by Dr. J. P. O'Leary for the REVIEW.*)

ARMY VETERINARY DEPARTMENT.

THE VETERINARY SERVICE OF THE BRITISH ARMY.

OFFICIAL REPORT TO THE ADJUTANT-GENERAL OF THE U. S. ARMY BY VETERINARIAN COLEMAN NOCKOLDS.

FORT CLARK, TEXAS, March 1, 1907.

The Military Secretary, United States Army, Washington, D.C.:

SIR:—I have the honor to report that in compliance with letter No. 1,185,497, Military Secretary's Office, War Department, Washington, D. C., December 14, 1906, I visited the Military Camp at Aldershot, England. The following is a brief report on the same:

Previous to the establishment of the Royal Veterinary College in London, England, in 1792, there were no veterinary surgeons in the British Army. The horses were attended to, when suffering from disease or accidents, by regimental farriers and sometimes the surgeon was called in to render aid. Early in the last century, as a result of the heavy losses among army horses, veterinary surgeons were appointed to cavalry regiments, to the Royal Artillery and to the Royal Wagon Train. They entered the service with the rank of lieutenants.

Each cavalry regiment had a veterinary surgeon, but the Royal Artillery had only two or three up to the time of the Crimean War, after which the number allowed for this corps was considerably increased, while each battalion of the newly-made wagon-train was allowed one.

With the abolition of the East India Company after the Mutiny the number was still further augmented owing to more Imperial Troops being sent to that country and the local service being no longer maintained. In 1878 the regimental system was abolished (except in the regiments of the household cavalry) and the veterinary department constituted.

All veterinary officers were then put on a general roster for foreign service, except those in the three regiments of household cavalry. The constitution of the veterinary department from 1878 until a few years ago was as follows:

A Director-General with the rank of Colonel.

Eight administrative veterinary officers who ranked as Veterinary Lieutenant-Colonels.

One hundred and nineteen executive officers with rank of Veterinary-Majors, Veterinary-Captains, Veterinary-Lieutenants.

The Director-General was the administrative head of the Department, he was an officer of the headquarters staff of the army, transacting his business at the War Office.

In England the administrative veterinary officers called District Veterinary Officers were four in number, stationed at London, Aldershot, Woolwich and Dublin. The district veterinary officer had the general administrative veterinary supervision of the district or army corps to which he was attached and was an officer of the district headquarters staff, available at the call of the General commanding. He personally superintended the veterinary duties of his division or district. His duties included frequent inspections of horses or other animals employed, stable, camps, forage and all departmental details under his charge. The result of these inspections was systematically embodied in a report forwarded to the Director-General.

The executive veterinary officers performed their duties under the direction and control of the Director-General and district veterinary officers of their district or division. A veterinary officer was attached to each regiment of cavalry and also performed the veterinary duties for other units at the station where he might be. Veterinary officers were posted to stations occupied by other mounted corps. Executive veterinary officers had the control of the infirmary stables and sick lines, pharmacies and forges and of the non-commissioned officers and men employed therein.

In addition to the care and treatment of the sick and lame horses, one of their most important duties was the prevention of disease by the avoidance or removal of predisposing causes and the adoption of the most approved sanitary measures in barracks, stables and camp lines. With these objects in view veterinary officers were required to give particular attention to the quality of forage supplied and to the general ventilation of stables and their advice and suggestions in these matters always received full attention from commanding officers.

With regard to shoeing, this service was carried on regimentally as to the supply of shoes, nails and tools, the management of horses' feet and the periodical renewal of shoes, but the manner in which the shoeing was conducted and the proper

instruction of farriers and shoeing-smiths were matters for which the veterinary officers were directly responsible, the patterns of shoes being arranged by the Director-General of the Department so as to insure uniformity throughout the army. Thus it will be seen that though he was a departmental officer the veterinary officer had to conduct his duties with a very intimate knowledge of the workings of the regimental system in order to insure successful results, and in their turn regimental officers looked to and supported him as a valued assistant and adviser.

Before 1878 veterinary surgeons were appointed first and second class with the relative rank of lieutenant, the administrative officers being chosen by selection. This was changed and they were given a military title in addition to their professional one, and this was found to be of much benefit to the service, the position of veterinarian often having to give orders to enlisted men was rendered more tenable and better results were had when he was recognized by troops under a military title which gave force and weight to his orders and suggestions and commanded the necessary respect and attention.

This new regulation proved most beneficial to the mounted corps of the army. In the Indian establishment there were four administrative officers, one of whom was selected as local chief with the designation of Principal Veterinary Officer to the forces. He was stationed at Simla. An administrative veterinary officer was posted to each Presidency as an Inspector. The duties of these officers were analogous to those of administrative veterinary officers at home.

These executive veterinary officers were not attached to regiments as at home but to station veterinary hospitals from which they visited outlying units periodically or as required.

These field veterinary hospitals were most favorably reported on during the late Boer War.

In the field, Principal Veterinary Officers were attached to the staff of the generals of communications and directed and were responsible for all veterinary arrangements connected with the army. Administrative Veterinary Officers were attached, one to each Infantry Division, one to each Cavalry Division, one to the line of communications, one to the base, one to the sick horse hospital and one to the remount depot.

These officers arranged and regulated the duties of the executive veterinary officers under the general direction of the

Principal Veterinary Officer. Executive Veterinary Officers were posted in accordance with the requirements of the army. Each had charge of a pair of field panniers, fitted with a complete assortment of medicines, instruments and surgical stores.

The Administrative Officer at the base was in charge of the reserve stores of veterinary medicines and appliances and entrusted with the duty of forwarding supplies to the front on requisition as required. Stores for immediate use were kept at the principal depots along the line of communications. A veterinarian was appointed to act as sanitary officer and to superintend the embarkation and disembarkation of all animals as well as to carefully inspect them to ascertain their general condition and freedom from contagious diseases.

The veterinary department in the field furnished reports and returns as to the health, sickness, casualties and sanitary condition of animals employed, saw to the supply of horseshoes and nails as well as field forges, kept a vigilant watch on the quality of the forage and did everything possible to maintain the efficiency of the horses and other animals in use.

At the present time the designation of the British veterinary service is the Army Veterinary Corps. The officers of that corps have combatant rank, the professional title being left out and the letters A. V. C. after their names show to what corps they belong. The uniform of the corps is blue with facings of maroon. Their substantive rank is as follows:

Colonel,
Lieutenant-Colonel,
Major,
Captain,
Lieutenant.

The Director-General, who is a Colonel detailed for that duty for three years, ranks as a Major-General during the period of that detail.

Candidates for commissions in the Army Veterinary Corps must make written application to the Secretary, War Office, London, giving the following details:—

1. Name in full,
2. Address,
3. Date and place of birth,
4. Special qualifications and school from which graduated,
5. Academic and other degrees and distinctions,

6. Particulars of any commission or appointment held in the public service.

This must be followed by a declaration that the above statement is the truth and of what country the applicant is a subject of.

A personal interview with the Director-General is necessary. Minimum age for a candidate is twenty-one, maximum twenty-seven. Candidates must be unmarried and will not be accepted except in the opinion of the army council they are in all respects suitable to hold commissions in His Majesty's Army. Every candidate must be a registered member of the Royal College of Veterinary Surgeons and pass an examination before a board of veterinary officers.

Certificates of birth and moral character are necessary and must be satisfactory.

The dean or other responsible head of the school from which the candidate graduated is asked by the Director-General for a confidential report as to his professional and general fitness to hold a commission in the corps. If approved, the candidate is examined before a board of medical officers, and if pronounced physically fit is then eligible for examination.

Examinations are held as vacancies occur, and successful candidates receive commissions according to the order of merit in which they pass. The examinations are written and oral. The candidate is then a probationary veterinary officer for a period of six months, at the end of which period, if his probationary services have proven satisfactory, he, on the recommendation of the Director-General and with the approval of the Army Council, receives a permanent commission ante-dated to embrace the probationary service. If his probationary service has not been satisfactory, his services are dispensed with and he has no further claim on the service.

A lieutenant is eligible for promotion to the rank of captain on completing five years commissioned service, provided that he qualifies in such a manner as is laid down by the Army Council.

A captain is eligible for promotion to the rank of major on completing ten years in the rank as captain on qualifying as laid down by the Army Council.

Promotion to the rank of lieutenant-colonel is by selection from majors of not less than fifteen years' service, at least five

years of which is foreign service, and qualifying as laid down by the Army Council.

Promotion to the rank of colonel is by selection from lieutenant-colonels, who have served for five years or over in that rank.

The appointment of the Director-General is for three years unless the term is specially extended by the Army Council for a term not to exceed a further two years.

Officers of the veterinary corps are eligible for promotion to brevet rank.

The examination of a lieutenant for promotion can take place any time after three years of service. The subjects are as follows:

- Duties of executive veterinary officers,
- Military law.

Examination of captain for majority any time within three years of becoming eligible for promotion. The subjects are as follows:

- Veterinary medicine,
- Veterinary surgery,
- Veterinary hygiene,
- Bacteriology,
- Tropical diseases,

One subject selected by the candidate with the approval of the Director-General.

Examination of major for lieutenant-colonelcy. Subjects are as follows:

- Military law,

Duties of administrative veterinary officer at home and abroad,

- Management of epizootics,

Sanitation of camps, stables and transports from the veterinary point of view.

The pay of these grades is as follows:

- Director-General—\$5,832 per year;

- Colonel—\$8.70 daily;

- Lieutenant-Colonel—\$7.29 daily;

- Major—\$4.86 to \$5.86 daily;

- Captain—\$3.84 to \$4.30 daily.

Lieutenant—\$1,215 yearly. Allowances in money \$1,000 yearly and proportionately in higher grades.

Extra pay, all grades, for foreign service according to geographical location of station.

* * * *

THE ARMY VETERINARY SCHOOL.

Aldershot Army Corps, Aldershot, England.

General Officer, Commanding-in-Chief, Sir J. D. P. French, G. C. V. O., General.

Principal Veterinary Officer, C. Rutherford, C. M. G., Lieutenant-Colonel, in charge of veterinary school.

The Veterinary School building is sufficiently large for its purpose, well lighted and fitted with blackboards, charts, models and other paraphernalia needed for demonstrating the lectures given. The student officers have access to the various veterinary hospitals and sick horse lines at the camp.

There is a large operating room in connection with the school and a laboratory for bacteriological work, and one of the most important things connected with the school, and under the charge of the Chief Veterinary Officer, is the Vaccine Institute which will be described later. Application to join the officers' class is submitted to The Professor, Army Veterinary School, Aldershot. Officers' classes are formed on the 15th of January and 15th of November.

Each class is made up as follows:

Cavalry—One from each regiment at home;

Artillery—Eight from the Corps;

Engineers—Four from the Corps;

Army service—Six from the Corps.

Additional officers are allowed to attend provided the total number in class does not exceed fifty.

Farriers' Class—Application is made to The Professor, Army Veterinary School, Aldershot. These classes commence 1st of March, 1st of May, and 1st of October. They are for Farrier-Quartermaster-Sergeants, Farrier-Sergeants, Shoeing-smiths, men training for shoeing-smiths and Infantry cold shoe-fitters.

Candidates must be of good character and have at least a third class certificate of education. Each farrier's class consists of the following:—

Cavalry—Farrier-Sergeants and Shoeing-smiths, 16;

Artillery—Farrier-Sergeants, 7; Shoeing-smiths, 13;

Engineers—Farriers-Sergeants, 1; Shoeing-smiths, 1;

Army Service Corps—Farrier-Sergeants, 2; Shoeing-smiths, 4; Infantry—Cold shoe-fitters, 6. Total, 50.

The Professor from time to time submits to the General Officer Commanding, for approval, such rules and regulations as he may think desirable to further the object in view. He also submits to the War Office an annual report on the working of the school and its results.

Veterinary officers desirous of attending the officers' class apply in the first instance to the War Office. Officers of all grades may attend the school. At the termination of the course of instruction a written and practical examination is given in the following subjects:

First Day. Written.

Construction of stables,	}	6 questions; Possible 60.
Management of horses in the stable, on board a ship, and in line of march,		
Embarkation of horses,		
The foot and principles of shoeing,	}	6 questions; Possible 60.
Sore backs and minor diseases,		
	}	6 questions; Possible 60.

Second Day. Written.

Dietetics,	}	6 questions; Possible 60.
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Practical,

Conformation,	}	Time 15 minutes. Possible 60.
Teeth and age,		
Detection of lameness,		
Recognition of various kinds of grasses in hay,		
Descriptions of grains, etc.,		

The questions for the written examination are prepared and marks allotted to the replies by the District Veterinary Officer assisted by a senior veterinary officer. The standard of qualification to pass is an aggregate of 50 per cent., provided a percentage of 40 is obtained in each of the first four subjects and 50 in the fifth. To pass with credit an aggregate of 75 per cent. is necessary. A board of veterinary officers with the District Veterinary Officer as President supervise the written and practical examination.

Vaccine Institution.

This institution is under the direction of the Professor of the Army Veterinary School. It consists of buildings specially fitted with stalls for the young cattle used in the preparation of the lymph; a room fitted with the mechanical contrivances necessary for the manufacture of the vaccine and for filling the glass capillary tubes with doses of the same; also rooms for quarters for the non-commissioned officer and men in charge. There is vaccine enough made at this institution to supply the whole British Navy and Army. The Professor, who is the principal veterinary officer of the Aldershot Corps, is responsible for the vaccination of the calves and for the collection and issue of lymph. He is assisted by the Assistant Professor of the School, who is a captain of the Army Veterinary Corps and Orderly Officer to the Principal Veterinary Officer. There is a monthly report submitted by these officers to the Director-General, A. V. C., for the information of the Army Council, showing the amount of lymph issued from the institute, with the results attained during the same period.

The stock of lymph kept on hand is not in excess of the quantity required to meet immediate demands and no lymph must be issued which may have deteriorated from age or other causes.

THE ARMY VETERINARY CORPS.

The present Army Veterinary Corps has for its object the treatment of all sick and injured animals during peace and war, on such a methodical basis that the efficiency of the army may be thereby increased. This can only result when there exists behind the fighting line a capable and organized department to which the care of all inefficient animals can be confided, as it will enable the troops to send back all casualties which hamper mobility, feeling confident that they will be skilfully attended to and rendered fit for reissue in the shortest possible time. Not a single person who is not in some way capable of affording special assistance to sick and wounded animals is employed in the A. V. C. The Director-General is the responsible head of the A. V. C. and is charged with the administration of the army veterinary services and the supervision of the veterinary dietetics and supply of veterinary stores to the army. He prepares statistical returns for presentation to Parliament and estimates for above services.

He nominates appointments for the charge and staff of the veterinary hospitals; staff of the army veterinary schools; staff of the vaccine institute and veterinary staff of the army remount establishment. He details officers, warrant officers, non-commissioned officers, and men of the A. V. C. for duty under the Principal Veterinary Officer of commands and keeps a roster of the officers on duty at home. Except for special appointments those officers who have been home longest are first for foreign service. The regimental records of soldiers of the corps, whether serving with the colors or the army reserve, are kept at the War Office in charge of an officer specially detailed. All sections and detachments of the corps in a command are under the general command of the P. V. O. or the immediate command of the senior executive officer of the station, or with the headquarters of the section. The headquarters of the sections are at Aldershot, Woolwich, Bulford, Curragh, Standardton, Pretoria, Potchefstroom, Middleburg, Bluefontein. The P. V. O. of a command is attached to the headquarters and is responsible to the general officer commanding-in-chief, for the administration of the veterinary services of the command. Under the general officer, he is in command of all officers, non-commissioned officers, and men of the A. V. C., as well as in control of the civil veterinary surgeons employed in the command, he countersigns and is responsible for all documents passing through his office, he at once reports to the general officer commanding-in-chief and the Director-General an outbreak of contagious and formidable diseases and adopts energetic measures for their eradication.

He inspects at least once a year all horses, stables, etc., in the command and if he thinks it advisable visits at any time stations or units in a command. He is responsible for the distribution of all stationary, forms and books to officers of the command as required by regulations. He keeps the Director-General posted on all matters that he should be acquainted with and submits the following returns to the War Office:

An annual general report and statistical return for the command, an inspection report, a monthly statistical return and a report on mobilization stores and equipment.

The executive veterinary officer or the senior veterinary officer at a station is responsible for the efficient performance of all veterinary duties at his station. The sick horses, hospital buildings and supplies are under the control of the veterinary

officer and the regimental staff detailed for duty with the sick horses are under his orders while so employed.

He makes arrangements with officers commanding units, of which he is in veterinary charge, for the inspection of all animals at least once weekly. He visits stations within ten miles once weekly and stations beyond ten miles once monthly. When necessary, horses are paraded outside their stables.

He reports to officers commanding stations and P. V. O. outbreaks of contagious diseases and takes energetic steps to eradicate them.

He inspects and makes reports on all matters relating to animals, stables, forage, camps, transports, stable management, forges and shoeing, and recommends any measures that may in his opinion conduce to the health and efficiency of the animals or mitigate or prevent disease among them. Veterinary officers are prohibited from giving assistance or certificates to public companies or to any individual not in the government service. All remounts are submitted to the mallein test and otherwise examined before being allowed to join a unit.

Sick horses are inspected at least once daily not later than 10 A. M. and at all hours necessary and a daily sick report is kept.

Veterinary officers becoming unfit for duty through physical disability or sickness, or on reduction of the establishment can be retired on half-pay at stated rates.

Veterinary officers can retire after twenty years' service at stated rates increased according to length of time in service after twenty years. In certain cases they can be retired after ten years' service when deemed necessary by the Army Council. Full pay is allowed during ordinary leaves of absence.

Special leaves are granted to a certain number of officers each year for the purpose of attending post-graduate courses, the fees of which are paid by the government. Officers receive full pay and allowances during the time they are attending the course.

In case of an officer marrying after he is sixty years of age, or more than twenty-five years older than his wife at the time of marriage, an ordinary pension is not granted to the wife at his decease, or, if the pecuniary circumstances of the applicant for pension are in the opinion of the Army Council such as not to justify the grant of a pension.

Transportation is granted to the families of officers of the veterinary corps.

VETERINARY HOSPITALS.

At different stations there are veterinary hospitals. These in general are really an arrangement of one-story brick and tile buildings, divided into spaces large enough for roomy box-stalls, each of which is as separate from the other as a separate building would be. Each stall opens into a general quadrangle. The buildings are arranged around the four sides, the doors of the stalls being arranged into an upper and a lower; the upper is about one-third the height of the lower, so that the horse can look out. These stables are built with all regard to modern sanitary principles. A portion of the buildings are modeled for offices, dispensary and operating rooms, as well as for quarters for the accommodation of the non-commissioned officers and men of the A. V. C. on duty at the hospital.

Separate quadrangles with loose boxes around them are situated a reasonable distance from the general hospital or troop lines for animals suffering from contagious diseases.

The hospitals receive for treatment all cases sent by veterinary officers in charge of units. These hospitals are in charge of veterinary officers under the authority of the general commanding and subject to the control of the P. V. O.

A necessary number of officers, warrant officers, non-commissioned officers, and men of the A. V. C. are provided for these hospitals. Orderlies in the proportion of one to three (or less) horses are detailed from each unit sending sick and are attached to the A. V. C. and are under the officer in charge of the hospital while so employed. The officer in charge is responsible for all of the duties of the hospital, for the buildings, equipment, stores and supplies.

He divides the duties between himself and the officers serving under him and refers to the P. V. O. all matters of doubt or difficulty in the management or treatment of the sick. He is authorized to draw any proportion of forage equivalents and notifies the officer commanding the corps on the day previous to discharge the number of horses to be returned to duty and in the event of a horse dying, at once informs the officer commanding the corps to which the animal belongs.

He is responsible that the authorized books and registers are kept up to date and in good order and produces them at the inspections of the P. V. O.

Charges of all officers are treated at the hospital, but they must make their own arrangements for the necessary attend-

ance on those that are admitted. Veterinary history sheets of all government chargers are completed before the animals to which they refer are discharged from the hospital.

In case of an outbreak of an infectious or contagious disease it is at once reported by the V. O. to the officer commanding the station or corps and to the P. V. O. The responsibility for representing all necessary measures taken as regards treatment of infected animals or isolation of contacts or units or disinfection of buildings and equipments rests with the senior veterinary officer at the station.

Animals are not allowed to be destroyed for contagious disease without previous reference to the War Office. In the case of glanders the most rigid means of isolation are adopted until the affected animal is disposed of. The mallein test is employed on all horses in a section, troop, squadron, unit or station in which a case has occurred.

Horses responding to the mallein test are rigorously isolated and again tested after an interval of not less than fourteen days. If the second reaction is typical or clinical symptoms appear the animals are destroyed.

If there is a diminished reaction on retesting, the animal is kept in isolation and again tested from time to time until there is no reaction, when they are considered safe, or until no change in the reaction for the better occurs when they are destroyed. The units to which the mallein test has been applied are not isolated after the disappearance of the last case. As precautionary measures all remounts are tested before joining units.

In cases of epizootic lymphangitis the most rigid and minute precautions are carried out to preclude infection of wounds by attendants or dressing materials and no wounds are dressed in the stable. The continued presence of mange in a unit is looked upon as a proof that satisfactory measures are not being adopted for its eradication. The methods of disinfection in use is briefly as follows:

All dust is dampened with a disinfectant and removed, the flame of a blow-pipe is passed over all paint, iron, brick and woodwork; white-washed walls are scraped and mangers, stall-posts, pails and floors are thoroughly scrubbed with soap, water and disinfectant, windows are left open for free ventilation and the whole thoroughly sprayed with a strong disinfectant before re-whitewashing. Whitewash is not considered a disinfectant. Preparations of mercuric chloride, carbolic acid, creolin and lysol

are considered suitable. It is considered very important that the scrubbing is thoroughly done. Blankets and other articles, which can be so treated, should be immersed in a disinfectant, leather goods scrubbed first in a disinfectant and then with soap and water; ironwork passed through a flame or soaked with the harness in the solution. Although articles of trifling value should be burned, as sponges, bandages, old brushes, etc., there is really no necessity for destroying articles of value. Carcasses of animals that have died or been destroyed for contagious diseases are burned. A cross-shaped trench is dug, filled with fuel and the carcass laid over it and saturated with oil. If buried, the top part of the carcass is at least six feet beneath the ground surface, covered with quicklime, the natural orifices being plugged with powerful disinfectants, and the discharges destroyed by fire or corrosives. The methods of disposal is recorded on veterinary sheets.

The grade of the enlisted *personnel* of the A. V. C. is as follows (excepting the Household Cavalry):

Farrier-Quartermaster-Sergeant,
Farrier-Staff-Sergeant,
Farrier-Sergeant,
Sergeant,
Corporal,
Shoeing-smith-Corporal,
Farrier-Corporal,
Shoeing-smith,
Private.

For promotion to these grades a Farrier-Quartermaster-Sergeant must hold a first-class certificate of education. A Farrier-Staff-Sergeant or a Farrier-Sergeant a second-class certificate. A Private a third-class certificate. Every facility is given for the training of men in this special duty and when considered efficient application is made to the P. V. O. for examination before a board of officers. The enlisted men of the corps are inspected daily to see that they are properly dressed, clean and sober, and no parades or inspections are held without the knowledge of the veterinary officer commanding the section. The senior or warrant officer of a section is a man who is an example to all in ability, conduct and appearance. He is watchful over the conduct and bearing of the non-commissioned officers and able to instruct all grades in their duties, well-acquainted with orders and sees that they are carried out. Under the

commanding officer he has general supervision over the hospital establishment and is responsible to him for the discipline and execution of all duties, he attends all parades and sees that the men are present, sober and properly equipped. In the absence of a veterinary officer he is able to take care of emergency cases admitted to the hospital and reports it without delay, checks all admissions and discharges and sees that no animal is permitted to leave in an unfit condition. He keeps a duty roster and list of defaulters and sees to the posting of necessary orders daily. All passes are initialed by him before being taken to the commanding officer.

He parades all prisoners ordered for trial, their escorts and witnesses, and see that they reach the court-room on time, and that the punishment awarded is carried out.

The stores, hospital buildings, enclosures (except those of the surgery which is in charge of a non-commissioned officer specially detailed), and supplies are placed in charge of a non-commissioned officer and he is entrusted with the duties in connection with pay, messing, forage and clothing. Exact accounts of issues and receipts are kept by him, and he is held responsible for all necessary returns and books.

The non-commissioned officer in charge of the surgery is responsible under the commanding officer for the surgery and its contents, for all general stores, equipments, instruments, etc., placed in his charge. He supervises the dispensing of medicines and helps and instructs the dressers who are placed in his charge.

All poisons are placed under lock and key. The supervision of the dressing of wounds, nursing the sick and dispensing medicines and accompanying the Veterinary Officer on his rounds are also duties which are required of this particular non-commissioned officer.

The non-commissioned officer in charge of the stables supervises the watering, grooming, and feeding and has charge of any transportation animals and vehicles used; is responsible for the proper cleanliness of stables and lines. He also receives forage and sees that it is properly prepared and issued.

The hospital clerk has charge of the office and is responsible for its cleanliness and order. He makes out the necessary returns and registers all correspondence and letters and has custody of the books and stationery. He enters all cases in the sick register according to details required and enters same on

the veterinary history sheet at the time of admission and discharge of animal from the hospital.

The non-commissioned officer in charge of the shoeing forge and shoeing is responsible for the same and sees that the shoeing is carried out and the army numbers of the feet are kept legible and renewed if necessary. He makes out requisitions for the forge and shoeing supplies and accompanies the commanding officer on his daily rounds.

The cook is responsible for the kitchen and its contents, its cleanliness and good order. He orders and receives daily supplies from the non-commissioned officer in charge of rations and fuel. He is responsible that rations are well cooked and served on time. He disposes of refuse and see that it does not accumulate.

For transfer of non-commissioned officers and enlisted men to the Army Veterinary Service the following conditions are necessary:

Farrier-Quartermaster-Sergeant—To have not more than fifteen years' service.

Staff-Sergeant-Farriers, Sergeant-Farriers, and Sergeants—Not more than seven years' service and to have extended their service to complete twelve years' army service.

Corporals, Shoeing-smith-Corporals, and Shoeing-smiths—To have more than seven years' service and to have extended their service to complete twelve years' army service.

Privates—To be in possession of service pay or to have qualified for it and to extend their army service to eight years. Character "Good."

RECOMMENDATIONS, ETC.

That a Veterinary Service be established in our Army with a chief corresponding to the Director-General of the P. V. O. of the English Army Veterinary Corps, and an inspecting veterinary surgeon be stationed at each division headquarters.

Under our present system the army veterinarian is a position in which he can either do his work thoroughly as far as his personal endeavors are concerned, or can shirk his duties, all depending on whether he is inclined to dead-beat or not, as there is no professionally competent head to see or know whether he is doing his work properly or not.

A certain uniform line of duty should be required. Veterinary medicines, instruments and supplies should be bought by a professional as this would do away with the present practice

of accumulating a lot of worthless drugs which are either wasted or thrown away.

Veterinarians should have full charge of sick horses with men to look after them and a place to put them.

Civil veterinarians should be examined before being hired by the government before a board that has at least one army veterinarian upon it. This would prevent the hiring of impostors as is now sometimes done.

I have known of more than one man being employed as Quartermaster's Veterinarian, who was not only a non-professional man but knew nothing whatever of the treatment of animals.

Uneducated enlisted men should not be made farriers and under no consideration should poisonous drugs be issued to them. This is also true of intoxicating agents and as to alcohol in any form, the veterinary portion of the service would be better if it was dropped from the supply table.

It often happens that a competent veterinarian is not at hand in emergencies or at post where there is only a small quantity of animals, but that might be provided for at small expense by the training of a number of non-commissioned officers and men as farriers and detailing them to these posts.

The advice of veterinarians as regards the conditions of a sick animal and the treatment of the same should be absolute and should not admit of argument. This is also true in the case of putting an animal on inspection report on account of sickness, lameness, malformation or age.

The United States Army Veterinarian at the present day holds a position analogous to that held by the Englishman up to the year 1878. Under present conditions I cannot recommend that this position should be materially altered, but in my opinion it would be for the benefit of the military service if army veterinarians were commissioned officers, but it is said that there are many objections to this, as the pay of the veterinarian is equal to that of a commissioned officer there can be only one main reason for not granting them a commission, namely:

They are not considered men that are socially and morally fitted for the position. If the inducements for an appointment as veterinarian were sufficient to attract the higher class in that profession there would be no question as to this, but the average veterinarian can make a better living in civil life. In the

service there is nothing for the veterinarian to look forward to, no promotion, no compensation if disabled in the line of duty, and if killed, or dies from some cause incident to the service his family is left without redress.

He is the only man in the regiment that gets no foreign service pay or commutation when on a detail away from a post. He would be better off as an enlisted man.

A commission would remedy all these evils. An examination would be required, which all veterinarians in the service should be required to take; it should be of such a nature as to finally decide as to whether the men who take it are a necessity to the service or not; those that were found deficient would be very fortunate if let out with one year's pay and the government would be a gainer; those who fail physically should be retired.

The few that remained and were not wanted in regiments could be sent to those mixed depots or posts where there are not animals enough from one organization to have a regular veterinarian stationed there. This is also true as regards a number of worthy elderly veterinarians, who have given the greater and best part of their lives to the service of the United States, uncomplainingly putting up with the same hardships and facing the same dangers as their more fortunate comrades the officers and enlisted men of the Army of the United States.

These gentlemen should be excused from the professional part of the examinations. I do not recommend commissions with high rank, but it would be only justice for the veterinarian to have at least the advantages equal to every other member of the regular establishment.

He is not protected by the Geneva Convention and is really a combatant, although under the present ruling he is neither a commissioned officer, enlisted man, nor civil employee.

There is no place for him at a regimental review, neither is there any place laid down for him at a post during inspection.

The duties of the veterinarian are important and responsible ones and often a great deal, perhaps the life of one or several animals depend upon prompt obedience of his commands, yet officially he is not allowed to give a command. If he does he has not the rank to enforce it.

All the greater military powers of the world have veterinary officers, and it has proved to be of benefit to the public service of those countries to give them rank.

It is very awkward and embarrassing for our veterinarians to come in contact officially with a veterinary officer of a foreign army, he is nonentity among them simply because he belongs to the Army of the United States and has no official standing.

It is not uncommon to meet veterinary officers abroad with a great deal less service who ranks the American veterinarian several grades. Most prominent public veterinary surgeons abroad acknowledge the veterinary department of our civil service is second to none in the world, there is no reason that the army veterinarians should take a back seat.

All army veterinarians should be required to take a course in tropical diseases of animals. To do this a preliminary course in practical microscopical and laboratory work is necessary.

Veterinary officers of the foreign services are encouraged and assisted by their governments to do this.

The proper teachers and demonstrators of Hippology at Post Schools are veterinarians as their professional studies fit them for that duty.

Forage for animals and meat should be inspected and passed by the veterinarian before being issued.

Remounts should be issued to units until the Mallein Test has been given and a veterinary examination has proven them to be free from disease, defects and malformations; even then there should be a stated time between the examination and the time they are turned over to the outfit for which they are intended.

The moral and social standing of candidates for veterinarians in the army should be thoroughly satisfactory to such an extent that there could be no possible objection to him becoming a commissioned officer. This should be positively known before the candidate is allowed up for examination.

The questions for the veterinary examination should be prepared by army veterinarians.

Very respectfully,

(Signed)

COLEMAN NOCKOLDS,
Veterinarian, First U. S. Cavalry.

A true copy.

J. C. PEGRAM,
Second Lieutenant, First Cavalry.

ARMY PERSONALS.

DR. GEORGE A. HARVEY, Jr., Veterinarian 6th U. S. Cavalry, has departed for Jolo, Philippines.

DR. WILFRED STOKES, McK., '07, was appointed veterinarian in the U. S. Army, on Aug. 8, and was assigned to the Cavalry.

DR. OLOF SCHWARZKOPF, Camp Stotsenburg, Philippines, will leave for home in January, 1908, and will be stationed at Fort Clark, Texas.

MAJOR A. BROWN, 3d Cavalry, and Veterinarian C. D. McMurdo, 10th Cavalry, sailed from the Philippines recently for Queenstown, Australia, to purchase 300 cavalry horses for use in the Philippines.

A CASE OF PURPURA IN THE DOG.—In a well-nourished three-year-old dog there appeared a hæmorrhage from the mouth, and simultaneously bluish red-colored hæmorrhagic spots about the size of a quarter-dollar became visible under the breast, in the armpit, on the abdomen, and on the inner surface of the thighs. There were no other lesions affecting the skin. Petechiæ about the size of the head of a pin were found on the conjunctivæ. The gums were reddened and swollen, from which oozed bright red blood. The teeth, particularly the incisors, were more or less loosened. On each side of the frænum linguæ a blood tumor about the size of a walnut had formed; its upper border seemed perforated here and there. The fæces were bloody. The temperature during the course of the disease registered between 38° and 39.3° C. The number of blood corpuscles were diminished, but no change in the physiological ratio between the red and white cells had taken place. Bacteriological examination of the blood, together with animal inoculation of the same, gave negative results. Death occurred on the twelfth day. At the autopsy, beside the hæmorrhagic lesions of the skin, there was nothing worthy of particular mention. The case was very similar to Werlhoff's disease of man; yet it is unlike scurvy through its sudden hæmorrhagic symptoms in a previously healthy animal by the lack of ulcerous inflammation of the mouth and also by its rapid course.—(*Von E. Raitsits, Budapest, in Allatorvosi Lapok. Translated by Dr. J. P. O'Leary, for the REVIEW.*)

"The REVIEW gets better with each issue. I simply cannot do without it."—(*H. B. F. Jervis, Houlton, Me.*)

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

LONG-DELAYED ATTACK OF MILK FEVER [*J. Randolph Welsby, M. R. C. V. S.*].—Very interesting because of the length of time elapsed between parturition and the apparition of the symptoms of milk fever, which was computed to be about twelve weeks. The longest period on record is that mentioned by Fleming and was of only seven weeks. This cow presented also a peculiarity in the attack, namely, a thrusting forward of the muzzle and elevation of the head; the eyes were amaurotic and appeared looking obliquely upwards and forwards. There was profuse lachrymation. The animal got well rapidly with the treatment of sterilized air.—(*Veterinary Record.*)

LACTATION IN NEWLY-BORN FOAL [*T. Valentine Pettifer, F. R. C. V. S.*].—Newly-born filly, which from the moment of birth presented her mammæ fully developed, rotund and quite an inch long. From each teat quite a half-pint of fluid was milked, a good stream, and the same examined under the microscope was to all intents and purposes the same as that of the dam. After ten days she was milked every day and gradually the secretion diminished and stopped.—(*Veterinary Record.*)

CRURAL PARALYSIS ASSOCIATED WITH ANEURISM OF THE EXTERNAL ILIAC ARTERY [*Prof. J. Share-Jones*].—This is extracted from a paper read at a meeting of the Lancashire V. M. A. After passing a brief review of the anatomy and course of the anterior crural nerve and observing that if common paralysis of the nerves of limbs were often attributed right, to direct obstruction by pressure upon its course, as in the case of obturator paralysis, for instance, or again as associated with attacks of hæmoglobinuria, tumors or abscesses and so forth, it occurred to the author that abnormal dilatation of the artery might be also a cause, as, after all, aneurism might produce a sufficient pressure on a nerve to interfere with its function. A pony having a typical crural lameness was found, which had

no history of hæmoglobinuria in him. Destroyed, careful dissection was made of the sublumbar region with the result that the first $2\frac{1}{2}$ inches of the external iliac were found to contract gradually over this portion and was followed by a distended portion almost 2 inches in length and having a diameter approximately $2\frac{1}{2}$ or that of the remainder of the vessel. Upon incising the vessel it was found to contain a quantity of disintegrated blood adherent to the walls of the vessel, which was not entirely obliterated. Although this one case is scarcely sufficient to allow that aneurism may be a cause of paralysis, it is worthy of being taken into consideration.—(*Veterinary Record*.)

FRACTURED CERVICAL VERTEBRÆ [*R. Porch, F. R. C. V. S.*].—An illustrated record of a case of an animal which was found in his stall cast. He was raised and put in slings. On the post-mortem which was made, the sixth and seventh vertebræ were found the seat of the fracture. The bodies of the bones were intact, but the transverse processes were separated from the annular portion of the vertebræ. There was also a considerable quantity of blood in the vertebral canal.—(*Veterinary Record*.)

ABDOMINAL WOUND IN A MARE, WITH PROTRUSION OF UTERUS AND BOWEL—RECOVERY [*J. McKinna, F. R. C. V. S.*].—An aged brown mare was turned out, she tried to jump a wooden fence and got staked in the abdomen. Seen two hours after, she is in a distressing condition, sweating profusely and blowing. The wound she has is situated in the right groin and is from five to six inches long in its outer aspect. The uterus and floating colon are protruding and highly congested. These are washed in a warm solution of creolin and sublimate solution and attempt made to reduce them with the animal standing. This being impossible, the mare is cast and put in position with the off hind leg taken out of the hobbles and stretched outwards and backwards. Great difficulty was experienced in returning the organs, the internal opening being much smaller than the outer. With careful pressure and gentle traction per rectum they were finally returned into place. As the internal wound could not be reached to allow stitching, the opening was well dusted with a dry dressing and packed firmly with absorbent wool and the skin wound stitched with double silk sutures. After the operation the animal being released was walked into a box-stall, where she soon manifested some colic, which was relieved with sedative draught. Although the temperature was

somewhat alarming at first, it having run from 102.4° to 104.2° , the recovery did not present anything peculiar, the wound having always been of good nature. The treatment consisted in dusting the wound several times a day with antiseptics and washing with sublimate solution. After one month the mare was all well.—(*Veterinary Journal*.)

LIPOMA OF THE PERINEANUM AND FIBROMA OF THE MAMMARY GLAND IN A BITCH [*F. A. Heney, M. R. C. V. S., and Prof. Geo. H. Wooldridge*].—An aged dachshund had been looked at some time previous for a small, rather soft, swelling in the perineal region about the size of a walnut. As she did not seem incommoded by it, she was left alone. Some months later the condition had changed. The original lesion had enormously increased in size and caused distortion of the perinæum. The anus was displaced in an upward direction and the vulva to a more marked degree downward and towards the right side. On manipulation it was found that the swelling was soft and gave the impression that it might be a perineal hernia. But as no viscera could be made out a diagnosis was made of myxoma or lipoma. There was besides that, a swelling of the penultimate mammary gland. Hard and dense with several large veins running over its surface; it was evidently a fibroma, so common in bitches. Operation was advised and accepted. The bitch was prepared and chloroformed. The perineal tumor was first operated upon and on dissection it was found to be loosely adherent to the structure of the region. Its vascularity was very small and hæmorrhage insignificant. The tumor was lobulated and had two firm attachments, one to the vagina and the other to the ischial arch. After removal the cavity was plugged with absorbent cotton soaked in a solution of chiosol and sutured. The mammary tumor was dissected and excised. Recovery was uninterrupted. On examination the perineal tumor proved to be a pure lipoma and the other a fibroma.—(*Veterinary Journal*.)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

(ESOPHAGEAL PAPILLOMATOSIS [*Prof. G. Moussu*].—Holding a clinical lecture and exhibiting a specimen of œsophageal papillomatosis, the Professor remarked: "In my work on dis-

eases of cattle, I mentioned only two symptoms: dysphagia and the apparent dilatation of the œsophageal canal in its cervical portion." The present case shows that we must add to those: the possibility of the existence of an œdema of the jugular groove, the possibility of bloody stasis of the corresponding jugular, the difficulty of deglutition going even as far as absolute or apparent anorexia and difficulty of rumination. Another point in consideration is this: In the cases of cervical œsophageal jabot, with very apparent swelling, the projection has variations in volume between meals. If little hay has been taken, the swelling diminishes little by little and reduces in a marked proportion, to resume its size as soon as hay is again taken by the animal. This is important in the differential diagnosis. In œsophageal deformation by neoplasms, on the contrary, the swelling remains the same without alternatives of increase and diminution. To resume, the symptomatology of such cases is: signs of acute or phlegmonous œsophagitis at the beginning, simulating perhaps a traumatism, œsophageal dysphagia without regurgitation, absolute or relative inappetency, deformation of the jugular groove by permanent and progressive œsophageal tumefaction and finally impossibility of alimentation.—(*Recueil de Medec. Veter.*)

HYDROCELE IN A GELDING—OPERATION AND RECOVERY [*MM. Marmois and Wilbert*].—A two-year-old colt was castrated. A month later a swelling of one of the cords has to be extracted with ecraseur. Four months after he has on the right scrotal region a swelling which grows slowly and presents the alternative of being up or down as if it were a testicle. Examined, the tumor is piriform, elastic, loosely adherent to the tissues under, but firmly held on the tissue of cicatrization of the castration. It is painless. Rectal examination excludes inguinal hernia and capillary exploring puncture gives escape to clear yellowish fluid. Hydrocele is diagnosed and the animal operated. Operation somewhat similar to covered castration with amputation of the sac forming the envelopes of the tumor, which was formed by wall of the vaginal serous covering.—(*Recueil de Medec. Veter.*)

A LARGE-SIZED FŒTUS [*M. Charbonnel*].—Seven-year-old cow is due to calf since twenty-nine days. She finally is in labor, but the presentation is anterior with the head bent backwards; the fœtus is very large; there is atresia of the neck and the case is serious. However, it was brought to successful ending by

the removal, after two and half hours, of a living calf which weighed *one hundred and seventy-seven pounds*.—(*Recueil de Medec. Veter.*)

RUPTURE OF THE LARGE INTESTINE BY INGESTION OF LARGE QUANTITY OF BRAN [*Mr. Chanier*].—A thoroughbred mare had her fore tendons fired and was turned loose in a box. Her diet consisted mostly of bran slightly damp. After a few days, she manifested urinary troubles, which were treated with mild diuretics. After two days she was taken with violent colic, which, notwithstanding severe treatment, carried her away. At post-mortem a rupture of the second portion of the large colon was found with the intestine literally packed with dry bran. This case shows that damped bran taken in large quantity absorbs such a quantity of water from the organism, that the secretion of urine is interfered with, and that in similar circumstances the bran swells in absorbing water, but that it is not sufficiently moist to pass easily in the intestine, and that it gives rise to an alimentary stasis with colics, and possibly, as in this case, to rupture of the intestine.—(*Rev. Gener.*)

PARALYSIS OF THE SCIATIC NERVE AND OF THE LUMBOSACRAL PLEXUS DUE TO A PRIMITIVE ENCEPHALOID SARCOMA AND EXTENDING LATER TO THE LUNGS [*Prof. Cadeac*].—Record of a twelve-year-old mare, which had on the left side of the croup a hard, painless tumor. The mare is lame and it is supposed, that to the tumor this lameness is due, as the muscles of the region are much atrophied. The animal is placed under observation. After two weeks the tumor has grown and forms a projection on the tract of the sciatic nerve. The mare moves with difficulty, she lies on either side, but when on the left, she has to be turned over or cannot get up. Rectal examination reveals a deformity indicating the projection of the growth within the pelvic cavity. No treatment can be applied. The mare dies suddenly. At the autopsy the skin removed, the growth was exposed. It was as big as a child's head and situated between the deep and middle gluteus, with numerous ramifications in every direction and involving the nerves, muscles, lymphatic glands. While the abdomen did not show any lesion, the thorax contained lungs which looked like those of an animal affected with extensive tuberculosis, namely, presenting numerous nodules of various sizes. The pericardium, as well as the pleura, was also covered with similar nodules. The microscopic

examination of the different tumors revealed that their nature was that of an encephaloid sarcoma.—(*Jour. de Zoötech.*)

CASTRATION OF A CRYPTORCHID—EVENTRATION—RECOVERY [*Mr. P. Leblanc*].—The object of this publication is to show that although the castration of cryptorchids by the Danish method is one which is very seldom followed by accident. The subject was a four-year-old colt, operated without any difficulty and in a few minutes. He was taken to a stable and when arrived there was taken with violent colic. The animal struggled terribly and soon the intestine protruded through the wound of the castration with all the stitches broken off. With a good deal of difficulty the protruding mass of the intestine was reduced, the abdominal wound closed again, the inguinal region packed with gauze and the skin sutured. Cicatrization went on without any further trouble.—(*Jour. de Zoötech.*)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

UPON THE TREATMENT OF TETANUS WITH HYPODERMIC INJECTIONS OF CARBOLIC ACID [*Dr. Ottorino Cangini*].—A handsome English colt of two and half years old presented all the symptoms of lockjaw. On making inquiries as to whether the animal had received any wound lately and having a negative answer, the writer made a careful examination of his patient and found that he had wounds of castration not healed and these had been the doors of entrance of the *Bacillus of Nicolaier*. Although the horse was very ill, on account of his value, treatment was decided upon and carbolic acid used as the agent to resort to. The wound was well disinfected and a solution of the acid prepared at 5% and 10 cubic centimeters of it injected four times a day subcutaneously. Rectal injections were also given every four hours, 4 grammes of the acid to one litre of water. After the fifth injection under the skin, improvement began to be manifested and after a few more, recovery was complete. In a second case the same result was obtained with the same treatment. It was in a mule which had

a bad wound on the top of the neck and in which the tetanic manifestations were quite severe. After the second day slight improvement was noticed and after four or five days the animal was in such condition that all treatment was stopped.—(*Il Nuovo Ercolani*.)

PRIMITIVE GLOBO-CELLULAR SARCOMA OF THE CORNEA IN A HORSE [*Dr. Pietri Ghisleni*].—This case will contribute to the history of tumors of the eye. It is the record of a bay mare, aged 12 years, which some five months before had received an injury on the center of the cornea of the left eye with excoriation of the skin of the supraorbital arch. At first, the owner thought little of it, and treated the eye with cold water applications and by the suggestion of a veterinarian by instillations of a solution of belladonna. The eye did not progress well and the animal was brought to the care of the author, who found the mare with both eyelids kept far apart by the presence of a projecting growth, fungoid, irregular on its outside, of gray-rosy color and ulcerated here and there. The conjunctivæ were congested, but the lachrymal apparatus was normal. The growth was firmly attached on the cornea and when manipulated for examination, the animal manifested great pain. It bled easily and presented several points of ulceration. Enucleation of the eye was performed and at the end of a month an artificial eye put in its place. The microscopic examination of the tumor revealed it *sarcomatous* in nature.—(*La Clinica Veterinaria*.)

FILARIASIS OCULI [*Prof. A. Vachetta*].—These are the records of two cases of filaria observed by the author. The first was in a colt, which had an ulceration of the cornea accompanied with an incipient stafilomatous growth. There was photophobia, great congestion of the eye and of the conjunctiva. Puncture of the globe was made and as the needle of Scarpa entered with the first drops of aqueous humor came out from the anterior chamber a white thready moving body, which was secured for further examination. Unfortunately it was lost in the solution of lisoform where it had been placed. In the second case, the true nature of the parasite was readily made out. It was a *Filaria papillosa*, which had given rise to a marked case of keratitis and probably also to iritis adhesion (synechia). It was in a donkey, which presented on the right eye lacerimation, cornea uniformly opaque, but not enough to prevent the detection of a filiform body, which seemed to be one decimeter long and was freely moving in the anterior chamber. The con-

junctiva was congested and the aqueous humor seemed turbid as much as could be judged through the opacity of the cornea. The iris and the condition of the pupil could not be made out well. The animal was operated with careful antiseptic measures and a filaria 86 millimetres long was extracted. Ultimate recovery followed without difficulty.—(*Il Nuovo Ercolani*.)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

PSEUDO-PERICARDITIS DUE TO SARCOMA OF THE VISCERAL PERICARDIUM [*Adjunct Huynen*].—A seven-year-old Dutch cow has never presented any signs of sickness, when one evening she showed on the chest a diffused swelling. The next day it had increased to such extent that it interfered with locomotion. The general state was good, the animal was still gay, but the appetite was not so good, rumination had stopped and there was a tendency to tympanites. The swelling had become enormous, extending from the superior third of the shoulder to the xyphoid cartilage. The jugulars were as large as a man's arm. There was venous pulse. The case looked as one of traumatic pericarditis and yet the history of the case was against this supposition. On percussion of the cardiac dullness it was found to cover a wider space. The beatings of the heart were normal, all taken into consideration, the case is diagnosticated as one of pseudo-pericarditis. At the post-mortem it was found that the pericardium was much distended. It contained, however, only little liquid, but at the base of the heart there was a large tumor which covered the auricles entirely. This tumor is elongated, and divided into two growths of different size. One is anterior and as big as a man's two fists, the other is posterior and larger by three times the size of the other. It is more irregular and presses on the anterior auricle. On the inside of this there is a tumor which is the principal growth and which has spread in all directions. Sections made of the various tumors exhibited all the characters of the sarcoma and microscopic examination confirmed the diagnosis. Contrary to what is generally observed in similar cases, the lymphatic glands were also sarcomatous.—(*Annales de Belgique*.)

THE TREATMENT OF GRANULAR DERMATITIS OR SUMMER SORES [*Prof. Liénau*].—The abundant suppuration which is observed on these wounds is an obstacle to the good action of most all the topics put on the skin. Anti-pruriginous substances have neither much show. Anyhow, good results can only be expected from agents which would realize the destruction of the larvæ, original causes of all the troubles. The Professor recommends the following: arsenious acid, sabina powder of each equal quantities mixed with gum arabic and water enough to make a semi-soft paste. Before use, clean and dry the wound as well as possible. If this is not done as the exudation is very abundant on these sores, it is possible that the paste, when applied, will not come in perfect contact with the tissues. Indeed, it is not uncommon to see this contact prevented by the exudation, which reforms itself very rapidly. When the desirable adhesion of the caustic with the tissues is sufficient and when the granulating surface is transformed into a dry scab, the itching is stopped at once. The scab of the cauterization is one or two centimeters thick and its sloughing is slow. When it takes place all there remains to do is to protect the cicatrizing wound from insects with a dressing of wadding, held in place by a coat of collodion. It is prudent to protect the tissues surrounding from the action of the paste by a good embrocation of vaseline.—(*Annales de Belgique*.)

THE TREATMENT OF AURICULAR CATARRH IN DOGS [*Prof. Hebrant and Adjunct Antoine*].—After mentioning several of the modes of treatment recommended by several authors and principally the actual cauterization which gave them good results although rather slow, the writers give their own, as follows: The end of the ear, seat of the trouble, is carefully washed with an antiseptic solution of carbolic acid at four per cent., the scabs are carefully scraped off and the sores disinfected, then cauterized with a cristal of sulphate of copper or tincture of iodine. After thorough drying with wadding, a small round piece of gauze is applied on the border of the ear and covering both faces. This is glued over the skin with simple collodion. A second and if necessary a third piece of gauze is applied in the same manner over the first, making each one a little larger so as to cover a little more surface, and gluing them by their borders with collodion as before. A minute pad of wadding is placed over that to make it softer and the whole is covered over with a last piece of gauze, also secured with collodion.

After a little while the dressing is dry and forms a hard envelope, aseptic, immovable and at the same time protecting, under which complete cicatrization goes on in about eight days. It is understood that previous to all this the ear and its anfractuosités have been thoroughly cleaned.—(*Annales de Bruxelles.*)

CASE OF INGUINAL HERNIA, NOT EPIPLOIC, IN A GELDING [R. Straunard].—This gelding has been sick a whole night and when the author saw him he presented the typical manifestations of a horse suffering with hernia. The rectal examination left no doubt as to the diagnosis. It was one of hernia and as the animal had been castrated it must be of an epiploic nature. The animal was cast for operation. But as soon as the envelopes were incised, instead of the omentum that was exposed it was the intestine, a condition rather rare in geldings. The horse was operated with an easy taxis and taken to his stall. When the operator removed his arm from the rectum it was found covered with blood. What was the cause and what did it mean? A serious prognosis was given. However, the next day rectal examination did not reveal any further trouble in that direction. The animal made a good recovery, but for several days after the operation continued to manifest some pains, as he kept moving his head and had the leg on the side of the operation held in abduction.—(*Annales de Bruxelles.*)

HENRY GRAVES, the oldest settler of Chicago, recently died, provided in his will for the erection of a monument to cost \$50,000 over the remains of his old trotting horse, "Ike Cook," which he owned fifty years ago, and who had a record of 2.30.

UTERINE CATARRH.—Chief Veterinary Seebach records the following case in the *Zeitschrift für Veterinaire*, which Dr. J. P. O'Leary translates for the REVIEW: "A young remount showed symptoms of colic, but on closer examination it proved that the mare had signs of being "horsey." A foul-smelling discharge escaped from the vulva. The vaginal mucous membrane was swollen and reddened and covered with a muco-purulent exudate. The os uteri was dilated sufficiently to admit the introduction of two fingers and was filled with the catarrhal exudate. Diagnosis: Uterine catarrh. Assuming that this mare never had been pregnant and the absence of traumatism, we must include this disease in the category of uterine catarrhs which are rarely mentioned in veterinary literature, and which cannot be associated with pregnancy, but rather the result from unknown infection or exposure to cold. Fröhner, Harms, Koch and Kettner have described rare cases of this nature."

CORRESPONDENCE.

OUTBREAK OF A DISEASE RESEMBLING TEXAS FEVER IN KANSAS.

SALINA, KANSAS, Aug. 14, 1907.

Editors American Veterinary Review:

DEAR SIRs:—We have here in our part of the State a disease that has caused considerable loss financially, and a great deal of investigation, and still there seems to be a difference of opinion as to what it is.

The history of cases is about as follows: About the 7th of May a car of dehorned and castrated bulls were bought in the Kansas City Stock Yards and shipped up here and put in a grass pasture with another car of a like description which had been there about three weeks. In the car received May 9, one was dead. Not much importance was attached to this, and the subject was skinned and buried without being posted. On May 24 one of this last carload was found dead in the pasture. The owner thought maybe the recent castrating and dehorning had something to do with the death of this one; and no post-mortem was made. On May 28 another one was found dead; still no post-mortem. On May 30 five head were found dead. I was called to investigate. When the owner 'phoned me, he stated that his cattle had the Texas fever. On my arrival, I began examining the dead carcasses for ticks, but could find none. On post-mortem, I found the following appearances: A very pale muscular system, a spleen very much enlarged. I had no way out there to weigh the parts, but I am confident that the largest spleen (from a stag four years old that, fat, would weigh 1,800 lbs.) weighed no less than 20 lbs. Most of the spleens would weigh about 15 lbs. and were filled with a very dark, tarry substance. Nowhere was there any coagulated blood. The liquid portion of the blood seemed to be floating in the abdomen, as the heart, veins and arteries were usually

almost entirely empty. The brain, lungs, heart, large intestines, liver, kidneys, bladder and contents, and, in fact, every organ seemed to be normal, except, as I say, a bloodless condition everywhere; and, in some subjects, a few discolored, inflammatory-looking patches in the small bowels. We (Dr. P. I. Kershner, B.A.I., Topeka; Dr. F. S. Schoenleber, State Veterinarian, and myself) examined this herd at about one hour before sunset; found nothing acting sick. Next morning, at 5, owner 'phoned that there were three dead ones. We took material from the blood, spleen, lungs, brain, kidneys, and lymphatic glands; sent them to Dr. Goss, the Bacteriologist at the State Agricultural College, for microscopical examination and inoculations; but he could prove nothing, because the material was too old by the time it reached him. So about June 28, Dr. Goss took his paraphernalia and camped with the cattle for three weeks, but nothing died while he was there.

As we had lost nothing since June 25th, we supposed it was all over, and the cattle were permitted to go to the block under inspection; but just as we were getting ready to ship we found another dead one on Aug. 10th. The balance were sent to market. Will say, in conclusion, that sixteen head of those imported cattle, three natives and two horses have succumbed to this disease. I have made post-mortems on fourteen cattle and one horse and find the same appearances in each instance, with one exception. In one of the natives, a yearling steer, I found a portion of the small bowel, probably a foot long, filled with coagulated blood, and clear through this trouble we were unable to find sick cattle except once, when I detected one steer acting a little droopy, but chewing his cud. Next day he died. Nearly everyone died in or near the water. This pasture is a 400-acre pasture with a ravine running through from north to south, with a few water-holes. At one time we thought maybe these ponds of water had something to do with the trouble, so we poured crude oil on them; then in a few days there was a heavy rain which washed everything out clean; but this seemed to do no good. In the pasture there was a well and windmill, the water from which was running all the time into a large tank, so that there was at all times plenty of fresh water.

What we want to know is, what disease these animals died from.

Very truly,

HUGH S. MAXWELL.

MONTANA FREE FROM DOURINE AND GLANDERS— REPLY TO CANADIAN ASPERSIONS.

HELENA, MONT., Sept. 7, 1907.

Editors American Veterinary Review:

DEAR SIRs:—I note in the August number of the REVIEW the perennial plaint that Canada (N.W.T.) received its dourine infection from Montana; "from which state, by the way, Canada has received several seedings with glanders and other equally undesirable diseases."

I can now positively state, and substantiate the statement by the cleanest of evidence, that the foregoing statement is absolutely false, and there is every reason to believe that Canada has not "received several seedings with glanders and other equally undesirable diseases from Montana."

Dr. Robert Treacy, Federal Inspector in charge of this district, who has had seven field men at work in Montana since early spring, stated to the writer a few weeks since that Montana was the cleanest state from glanders of any with which he was personally acquainted.

There have been in this state since early spring nearly a thousand horses mallein tested intended for Canadian shipment; the mallein test made by veterinarians approved by Dr. Melvin, and among the entire number tested not one reactor has been determined.

The statement that the diagnosis of Canada's dourine was not confirmed by any of the American veterinarians can easily be disproven by consulting Dr. Rutherford's 1904 report.

Immediately on finding suspicion of this disease near Lethbridge, N. W. T., by Dr. Burnett, Dr. E. T. Davison, Federal dourine expert, was sent by Dr. Melvin, at the special request of Dr. Rutherford, to consult with Dr. Burnett, and at this time Dr. Davison confirmed Dr. Burnett's diagnosis.

Early this year, at my request, Dr. Melvin stationed Dr. Davison in Montana for the purpose of fully investigating the continued allegations of the Canadian authorities that Montana was a "hot-bed of dourine." Since early spring Dr. Davison and seven qualified field men have been assiduously searching for this and other infectious diseases on the range and among closely domesticated herds throughout the State. During this time several thousands of horses have been examined under all conditions and not even a suspicion of this disease has been found.

It would appear that the Canadian authorities for some reason known only to themselves, are making these unwarranted statements relative to the domestic animals of Montana, and the only reason that I can see for their so doing is the evident intention of injuring the Northwest Territory market for Montana-bred stuff.

I trust on the publication of Dr. Davison's report of his investigation in Montana, you will do me the kindness to give it a prominent place in the REVIEW, so that the profession in general can judge for themselves as to whether the allegations of the Canadian authorities and others interested are malicious or not.

Yours respectfully,

M. E. KNOWLES.

THE GEORGIA LEGISLATIVE SITUATION.

EXPERIMENT, GA., August 27, 1907.

Editors American Veterinary Review:

DEAR SIRS:—Referring to the progress of Veterinary Legislation in Georgia, I beg to advise that the bill for the establishment of a Veterinary Examining Board, and regulating the practice of veterinary medicine, was readily passed by the House of Representatives in the session just closed; and was favorably reported by the Committee, and read the second time in the Senate but I regret to say during the last two days of the session it failed to come up for final reading and passage, on account of the immense pressure of other business. It will now remain on the calendar without prejudice and will come up early in the session of next summer, and the Georgia Veterinary Association feels confident it will be passed without trouble. There were no objections to the bill, in fact, it was considered a good move, but the General Assembly were so busy reforming the prohibition and franchise laws, and getting after the railroads, that there was very little time for the consideration of other measures. It is said by good judges that our Association did well to get the bill as far along as we did. We, of course, regret the postponement of justice for well trained men until another summer, but will try to make up for it later. The Georgia Association now numbers 20 good men who are strong and active in the profession.

Very truly yours,

C. L. WILLOUGHBY,

Secretary Georgia Veterinary Association.

BIBLIOGRAPHY.

The house of W. R. Jenkins Co., New York City, is keeping the veterinary profession supplied with new works and revised editions of their most popular text-books. Within the past month we have received from it not less than five of such works, and more are promised in the near future. All of the old works have received careful overhaulings by their authors, and are made in every way to conform with the latest advances in veterinary knowledge. They are as follows:

VETERINARY OBSTETRICS. By W. H. Dalrymple, M. R. C. V. S., of the Louisiana State University.

This work is too well known to require any further words than were expressed on the occasion of the appearance of its first and second editions, other than that the author has added several important sections, particularly one on the latest discoveries in the treatment of parturient paresis, and the treatment by compressed yeast of abortion in cows.

VETERINARY TOXICOLOGY. By Joshua A. Nunn, F. R. C. V. S.

While this is a new work in book form, the material has already appeared in the *Veterinary Journal* (London), and was commenced by the author while in England and completed in South Africa. He makes no claim to originality, but has compiled from all available sources a very valuable little volume for convenient reference by practitioners and others. It has hitherto been a serious undertaking for a veterinarian to seek accurate and full information upon toxicology, and the labors of Dr. Nunn will be gratefully appreciated.

THE SURGICAL ANATOMY OF THE HORSE. By John T. Share-Jones, M. R. C. V. S., Lecturer in charge of the Department of Veterinary Anatomy in the University of Liverpool, etc. Part I., of four parts.

In publishing this beautiful work the author says an attempt is made to supply what is believed to be a long-felt want in the veterinary profession, namely, a complete description of those anatomical regions which are directly concerned in the practice of veterinary surgery. In the preparation of the work anatomical structures are dealt with according to their bearing upon the surgical affections and operations. Part I. is indeed a magnificently printed and arranged volume, the plates being marvels

of excellence, many of them in colors, and, while our cursory examination does not permit of an exact statement as to its technical correctness, it seems unreasonable that a work upon which so much care has been bestowed could be otherwise than accurate in all details. Part I. includes: (1) superficial examination; (2) head and neck in section; (3) the teeth; (4) the tongue, soft palate, œsophagus, and salivary glands; (5) the larynx, trachea, and guttural pouches; (6) the bones—sinuses of the skull; (7) the temporo-maxillary joint—the ligamentum nuchæ and the region of the atlas—poll-evil; (8) the eye and the external ear; (9) the superior maxillary division of the fifth nerve—the blood and the lymph vessels; muscles of the head and neck; table of nerves of the head and neck. The author, being a firm believer in the superiority of a pictorial over a verbal knowledge of anatomy, has graphically illustrated the text wherever possible and has reduced the written matter to a minimum. In this first part there are seven colored plates and twenty-six half tones.

Modern veterinary surgeons must have this work.

VETERINARY MATERIA MEDICA AND THERAPEUTICS. By Kenelm Winslow, M. D., M. D. V., B. A. S. (Harv.). Fifth Edition, revised and enlarged.

It seems that each year Winslow revises and Jenkins publishes a new edition of this excellent text-book. They are determined to keep this work at its highest point of efficiency. In the present revision the most notable feature is the substitution of a section on Condensed Treatment of Diseases of the Domestic Animals for the Index of Diseases and Remedial Measures, at the end of the book. Winslow's work has so completely superseded all other text-books in American schools, that it is gratifying to see this yearly effort to keep it worthy of the place it has attained.

THE VETERINARIAN'S CALL-BOOK. By Roscoe R. Bell, D. V. S., of the REVIEW.

This little pocket account and reference book has been thoroughly revised from the first to the last line; some of the data that has been carried for many years has been omitted and its place supplied by newer material deemed to be of greater value to those who have constantly used it for some fifteen years. A chapter on Prescription Writing has been added for the convenience of new practitioners and those who may wish to refer to it in the proper composition of prescriptions, while tables covering a variety of subjects are distributed throughout the forty-one pages of reference matter. An up-to-date list of all the vet-

erinary medical associations of the United States and Canada is given, together with their secretaries and their addresses, as well as a table showing the states of the Union having veterinary practice laws and their executive officers.

In its revised form "The Veterinarian's Call-Book" will be found a more valuable companion than heretofore.

The Jenkins Company announce that a revision of Smith's "Veterinary Physiology" will soon be ready for distribution, and that a work on "The Production and Marketing of Clean Milk," by Kenelm Winslow, which will be right up to date and well illustrated, is now in press.

(R. R. B.)

OBITUARY.

HUGO L. RAMACCIOTTI, D.V.S.

On Tuesday, Sept. 10, this well-known and popular veterinarian of Omaha, Neb., died suddenly from cerebral apoplexy while being shaved preparatory to departing for the Kansas City meeting of the A. V. M. A., of which he was an old and honored member. The news was soon telephoned to the convention, and the greatest gloom was cast over that organization. Resolutions of regret and condolence were adopted, and a wreath of flowers was ordered placed upon his bier in the name of the Association.

Dr. Ramacciotti was a native of New York City, and studied veterinary medicine at the old Columbia Veterinary College, from which he graduated in the early '80s, soon afterward going to Nebraska and locating at Omaha. He enjoyed a lucrative practice, held many positions of honor and trust, and was affiliated with many secret and civic organizations. He was a prime mover and leading spirit in the Order of Ak-sar-ben, which entertained the A. V. M. A. so royally in 1898, and a large delegation from the organization attended his funeral. About two years ago it became necessary to amputate one of Dr. Ramacciotti's feet, and it is said that he never enjoyed good health after that event. He limped around with a beautiful gold-headed cane presented by his *confrères* in Nebraska.

He was a loyal and hard-working associationist, being a member of every veterinary organization to which he was eligible, and was indefatigable in his efforts to prosecute illegals and to uphold the practice law of Nebraska.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The forty-fourth annual meeting was held in the Casino, Kansas City, Mo., September 10, 11, 12 and 13, and was called to order at 10:30 A. M. of the first day by President James Law. A circumstance which foretold the unprecedented attendance which was to mark the meeting of 1907 was that when the president's gavel descended the room was filled to its capacity by members and visitors, including a large number of ladies. When the meeting had been formally opened, the president introduced, Hon. Henry M. Beardsley, Mayor of Kansas City, who welcomed the veterinarians to the Western metropolis in a manner which made them feel that a part of everything they beheld belonged to them. He stated that as there was no wall around the city, no keys could be delivered to us, but he assured us that the pardoning power was absolute with the Mayor, and we might expect the utmost clemency in case of transgression. He told of the wonderful growth of Kansas City and how the civic pride of her citizens had stopped at nothing in forcing her to the front of America's great cities. Their zeal, he said, sometimes made them appear ridiculous in the eyes of outsiders, and to illustrate this he told a number of anecdotes. One was about a Kansas City man who was forced to change his residence to another State. Meeting an enthusiastic resident of that city one day, the natural topic of conversation was the wonderful growth and development of the Missouri city. The resident was extravagant in his description of the rapid advance being made, and he told his friend that the situation beggared description; he must actually see it often to appreciate what was going on. "But," said the former resident, "I do keep posted; I was at Kansas City for two days week before last." "Yes, yes; I understand that; but you ought to see it *now*." Another story was about two residents of Kansas City who made a visit to the Pacific Coast. One of these was of the beggar-description variety, and his friend asked him to be circumspect in his references to matters at home, else people would discredit his stories. It was finally agreed that the conservative Kansas Citian was to step on the toe of his friend whenever he wandered beyond the danger lines. One day while on their visit, a resident of the Golden Gate was telling of the great

buildings projected to replace those destroyed by the earthquake and fire of a year ago. But these buildings were nothing to the Missourian. "Why," said he, "the Jones' Dry Goods Company has begun a steel structure on Main street that will be twenty stories high, six hundred feet long, and"—just then his friend stepped on his toe—"and *two feet deep*." When his attention was drawn to the ridiculous proportions of the Main street building, he remarked that if his friend had let him alone he would have had a creditable structure erected. The Mayor had watched the progress of development of the veterinary profession and the automobile industry, and was entirely convinced that there was no serious menace to the former by horseless vehicles.

Dr. W. H. Dalrymple, of Louisiana, was selected to respond to the Mayor's address, and the association has never been more fortunate in its representative, for Dalrymple was eloquent, diplomatic, wise and witty, and any one who heard him, whether layman or professional, had a higher regard for the veterinary profession at its conclusion.

At the conclusion of the formalities attending the opening exercises, the president delivered the annual address, as follows:

PRESIDENT LAW'S ADDRESS.

"In facing the pleasant duty with which you have honored me, I claim the privilege of speaking freely from a lifetime of experience as a veterinarian and teacher. It has been well said that the medicine of to-day differs radically from that of twenty years ago. I had the privilege of listening to an able professor who followed the great Sydenham in his doctrine of *epidemic influence*, and who denied the contagious nature of epizootic diseases. It is still interesting and instructive to read their arguments in favor of the all-controlling influence of telluric, atmospheric, and dietetic conditions, and to suspect that we modern students are at times too much tempted to ignore obvious truths in favor of others no less patent, which dominate the medical mind of to-day. Then, as now, the mind, strongly preoccupied by a foregone conclusion, followed the time-honored habit of magnifying the evidence which made for its own preconceived belief, and of minimizing or ignoring that which would lead to an opposite conclusion. Every epidemic and epizootic from small-pox to scarlet fever and from Rinderpest to rabies was considered due to the epidemic constitution, and was to be met by changing the constitution and environment. The great funda-

mental truth of a living pathogenic germ, self multiplying and self propagating, did not as yet dominate the medical mind.

"To us such a position seems absolutely impossible and we are tempted to recall the statement of Carlyle that our race consists of so many hundred millions of human beings—mostly fools.

"But we must not forget that the human mind, even to-day, is far from perfect in its operations; it is difficult to keep before it all phases of any given problem and still more difficult to give due and equally just emphasis to all such phases. The mind of a Socrates, Plato or Aristotle was just as clear, sound and potent as the minds of modern Europe or America.

"The ancient knew intimately the stars and planets and their courses, and arranged their calendars accordingly, but it required the genius of a Copernicus to upset the theory that the earth was center of the universe, round which the whole cosmos revolved.

"The brightest minds of early times were familiar with the generation and force of steam, but it required the mind of a Newcomen or Watt to effectively harness this great power and set it to do the work of the world. Once this was done, its adaptability was so self-evident that we wonder how the solons of earlier times could have escaped recognition of such an obvious application.

"The same is true of every great discovery. When demonstrated it is simple and obvious to the mind cognizant of the conditions which led up to it, yet for untold centuries it had remained a closed book to humanity as a whole.

"Medicine furnishes no exception to this general rule. To achieve an advance two things are required: 1, That we stand on the vantage ground of the best science of the past; and 2, That we cultivate the appreciative mind ready to avail of the finger-posts in past and present science which point to a new and fruitful departure.

"Veterinary examples of this great truth crowd upon us. Gastric indigestions were first treated by stimulant ammonias and essential oils; then the alkalinity of ammonia suggested alkaline preparations of soda and potash which also cured by arresting the acid fermentation: then the acknowledged arrest of the fermentation suggested the successful use of antiseptics, such as essential oils, sulphites, chloral, etc. The local treatment of milk fever by supposed antiseptic measures appeared to establish the fundamental value of potassium iodide, but, on experiment, other antiseptics did equally well, as did distension by bland liquid mix-

tures, colostrum, oxygen and even sterilized air. The advance was natural and indeed inevitable, yet the great mass of veterinarians was not instantly appreciative, and it remained for a few observant, resourceful and meditative persons to rise to the demand of the moment and to apply the torch to the accumulating, illuminating materials and light up the darkness of previous doctrines and therapeutics.

" Few advances of all the ages are pregnant with more good to humanity than this simple development in the field of milk fever. We can now secure the survival of the fittest, breed races more and more productive of milk, raise the average yield per cow to five times the former amount and upward, and the financial return from \$500,000,000 to \$2,500,000,000. This makes no account of the resulting increase of live stock, and natural fertilizers, of the soil enrichment, and of the increase of farm crops generally.

" Great minds as well as small ones, suffer from the one-sided and imperfect view of things. The immortal Pasteur, who robbed hydrophobia of its terrors, bringing well founded hope and comfort to the bitten man, yet in his endeavor to immunize the dogs of France against rabies, by inoculation with a weakened virus, has riveted the chains upon the nation, when rabies could and should have been eradicated as it has been from the British Islands. The great Robert Koch fell into a similar error in exploiting his tuberculin as a cure for tuberculosis. With his mind filled with the prospect of personal benefit *to the individual attacked*, he failed to appreciate the fact that, in the lower animals, the question of controlling a contagious disease is essentially an economical one, and that no animal is so sacred, or so valuable, that it can be safely preserved at the expense of infecting others and perpetuating for all time a deadly pestilence. The blinding effect of a fixed habit of mind is further shown in the fact that he and his followers have their eyes closed to the obvious fact that tuberculosis, in neither man nor beast, produces in its victim such antagonism to the bacillus as would give reasonable assurance of the extinction of that microbe in the same system. The moderately affected man or animal often survives for a reasonably long lifetime, without the destruction of the bacillus in the system and without becoming proof against renewed infection by bacilli entering from without.

" An acute infectious disease, self limiting and rarely or never recurring in the same individual, offers itself for safe and effec-

tive immunization, but with tuberculosis or glanders which may last in a chronic form for a lifetime, the preservation of the animal is too often but a means of perpetuation of the infection.

"The considerations, which would condemn the application to animals of the tuberculin treatment of Koch, apply with greater force still to the *bovo-vaccine* treatment of the honored Von Behring. This provides for introducing, into the system, not only the chemical disease-products, but the modified bacillus as well. No wonder that the lauded immunizing action is partial and uncertain and that many of the animals treated show tuberculosis afterward.

"It cannot be justly said that, in certain favorable cases it is impossible to induce an appreciable amount of intolerance and immunity, as this can be secured in measure by open air life, a generous oleaginous ration, a tonic treatment, the injection of oxygen, a freer circulation of opsonins, etc., but it can be truthfully affirmed that no one of these, nor all together, can be trusted to give an immunization which can be successfully employed on a large scale, as a State sanitary measure, for the purpose of securing complete extinction of tuberculosis in the herds of a country. Whenever a State enters on an earnest work of extinction of the disease germ in animals, immunizing measures of this kind must be forbidden, or the alleged immunized herds must be carefully and permanently secluded from other animals.

"It would be pessimistically wrong to deny the possibility of immunization against tuberculosis, but up to the present time we seem to have been working on the wrong line. We have by no means exhausted the probable resources of nature in this matter. The solution of the problem, if ever made, may turn out to be as simple as was the changing of the chemical reaction in gastric tympany or the arrest of the production of leucomaines in milk fever. Until we reach this wished for goal, we must, in State sanitation, earnestly pursue the old, tried and approved methods of veterinary sanitary science and police, methods which have never failed us when intelligently, earnestly and honestly applied.

Old and New Science and Method.

"In carrying out old established methods, however, we must not for a moment forget nor ignore the new lights that are being constantly shed on the fundamental truths on which these methods are based. What is the life history of each infective germ? Is it alkali proof or acid proof? Is it aerobic or anaerobic?

Does it love light or darkness? What races of animals and what animal juices sustain its life, productivity and virulence and what do not? Is it a compulsory parasite or only a facultative one? Can it be maintained virulent, on, or in, vegetables, or other non-animal medium and, if so, on what? What soils, air, buildings and other materials of the environment favor its preservation and virulence? What rations and what agents taken into the animal system increase, and what decrease susceptibility to its invasion? These are but illustrative examples of the necessity of the broadest and most accurate knowledge in dealing with any one microbe, and with sanitary expedients for its suppression.

"Miserable failures constantly follow the lack of the new scientific knowledge. How many have been brought face to face with the sheep-worms diagnosed as tuberculosis? Or with *Oesophagostoma* nodules which had been charged to consumption? Quite recently a most deadly extension of uncinariasis in a large kennel, was treated for a length of time as distemper. Too frequently the deadly uncinaria or the *stroggylus* (*Ostertagi* or *Vicarius*) are mistaken for dysentery.

"On the other hand our modern, improved, laboratory methods of diagnosis have been allowed to crowd out, the older approved systems, and to leave a case in doubt which could have been quickly and accurately determined by such older methods. A mad dog, shot in the head, is examined for the Negri bodies, and for the neuroglia-cell proliferation in the plexiform ganglion, but naturally without any satisfactory results. The body of the dog has been buried and the question of rabies is left in doubt. In one such case I had the body exhumed, when the congested stomach, devoid of food materials and containing grass, straw, and wood, together with the empty, congested urinary bladder, coincided with a history of furious rabies in making diagnosis of rabies certain. In other dogs killed early, before the patho-histological lesions were developed, a safe diagnosis could be made on the stomach, bladder and history. In such cases the old method gives conclusions which could be implicitly relied on, when the mere microscopic, laboratory examination is worthless. I hope no one will misunderstand me here. I stand for the new diagnosis quite as strongly as I do for the old. No one can afford to discard either the past method or the present, each is essential in its own proper place; each can furnish results that are absolutely reliable; both should be availed of when circumstances permit. But in the early stages of the disease or with the head crushed,

the new laboratory method may prove valueless. And yet the laboratory method has so engrossed the modern mind that the practice now is to send but the head only of an animal suspected of rabies. This cannot be too strongly condemned, betraying as it does, the lack of a sufficiently comprehensive knowledge of the disease on the part of those in charge. Wherever available the microscopic diagnosis of the disease should be sought, but in no case should the macroscopic diagnosis be omitted.

“Tuberculosis.”—Again no means of diagnosis is more reliable than the tuberculin test in suitable conditions. But the modern tendency has been to abandon all other methods in favor of this as an exclusive resort. To show the mistake of this, I need only recall that this test may be absolutely unreliable in case of a beast with an abnormally high temperature: in a tuberculous cow in a state of marasmus: in a parturient or aborting cow: in the subject of any disorder liable to cause a rise of temperature apart from the tuberculin: in an animal which has been repeatedly tuberculinized; in an animal exposed to any cause of excitement or change of environment, which will tend to generate animal heat or restrain its radiation, or in any one of a number of other inimical conditions. The operator who bases his diagnosis on tuberculin alone must at times stand in pitiable helplessness. But the newer tuberculin tests must also be availed of. Vallée has shown that the skin of the tuberculous horse, ox or pig, shaved and painted with tuberculin, and, when dry, scarified to the surface of the derma, develops a congestion, exudation, œdema, and thickening, which is not shown in the sound animal. This lasts two days to several weeks. Fraud may be largely obviated by covering the part for 12 hours with a cloth cover attached around the edges. Vallée has further shown that instilling tuberculin into the conjunctival sac produces in 6 to 12 hours, weeping, ptosis, congestion and œdema which lasts for two days or more.

“In degeneration and especially cretification of tubercle the Röntgen ray is an available means of diagnosis, with the drawback that time, experience, skill, and elaborate apparatus and power, stand in the way of any general application of the method by the practitioner.

“Again the agglutination test can be applied, and though it is not yet proved to be infallible it can be made a valuable accessory to the other methods.

"These new tests have the advantage of doing away in large measure with that continued vigilance and exhausting labor, which have proved a serious temptation to the careless practitioner to slight the work and leave his results unworthy of implicit confidence.

"*Autointoxication* is familiar in medical thought as never before, and offers a satisfactory explanation of many morbid states which were more or less mysterious to our forefathers. The poisonous principle is generated in the body cells as in the case of leucomaines, in fermentations in gastric intestinal and other visceral contents, in disorder of secretory functions, in decompositions of secretions already made, in degenerations of tissues, in neoplasms, or in other morbid states. Until we become acquainted with all phases of organic and physiological chemistry, with the influence of different rations and interactions of different ingredients, with the effects of various regimens and environments, we cannot hope to understand the bearings of all forms of self-poisoning, nor be prepared to deal with them as expert physicians.

"*Parasitism* is to a large extent a new field for the veterinarian of to-day. He must now recognize parasites not only as causes of irritation, depletion and exhaustion, as interfering directly with the functions of the organs they invade, but also as contributing to the production of toxic matters which interfere with vital functions, and, still more important, as the bearers of microbial infections of the most dangerous kinds from one animal system to another. Lice and fleas, mites and ticks are to-day recognized as bearers from animal to animal of microbial infection. This applies, not alone to the blood-suckers, and to insects that bite the skin, but to such as, like the house fly, transfer on their pad-like palpi, the infection from sore to sore, from mucosa to mucosa, or from injected animal product to food or water. Some carry from victim to victim embryos of worms, some entertain a larva to be swallowed by another animal in which it may develop into a mature tapeworm, some entertain and transfer a plasmodium, a piroplasma or a trypanosoma to the blood of a new victim, some generate in addition a venom which, instilled with the microbe into the wound, depresses the vitality of the defensive elements in the tissue of the victim and lays the latter open to invasion. The great extensions of many of the resulting diseases during hot weather, when

invertebrates abound, are often largely due to such intervention of insects.

"Turn to worms and we meet with hundreds of species and varieties which not only invade the bodies of their respective hosts, but often introduce more or less deadly infections as well. The many worms that as embryos burrow into the tissues and vessels are the most liable to infect, next come the large class of blood-suckers that make breaches or virtual infection channels in the mucosa, together with a large number of tæniæ, and other helminthes with armed heads. But it is impossible to exonerate the non-burrowing and non-biting varieties, as their embryos are liable to enter the ducts of intestinal glands, and the alveoli of Peyer's patches and the solitary follicles, where infection can rest and multiply until it can enter the system as microbe or microbial toxin. Cases of tetanus of obscure origin, of appendicitis in man, and of inflammatory ulcerative and general disorders are now traced to such causes.

"These give us faint glimpses of wide fields that have been too much neglected in veterinary medicine, sanitation and education, but which demand in the future earnest cultivation by the profession. Parasitism has become an important study, accessory to the vast modern field of bacteriology and bio-pathology, and one that can no longer be left to neglect nor treated lightly.

"*Surgery* has through asepsis and antiseptics attained to triumphs undreamed of in the past: it is now a familiar thing to open the abdominal cavity even in the horse, to perform plastic operations on the bowels, the joints, or the great nerve centers; to arrest hæmorrhage by somatic products like adrenalin, or chemical ones like lime salts; the long-standing opprobrium of paralysis of the arytenoid muscles has been largely removed by obliteration of the laryngeal ventricle by pulling off its mucosa; diagnosis of lameness has been simplified by the use of electricity, cocaine or stovaine, and the operator commands the situation in many cases where formerly he stood helpless.

"*Physiological therapeutics* is coming to the front in different lines and gives promise of great future usefulness. The possibilities of immunization have hardly been touched on as yet, but we are constantly learning more of the conditions in which it may be splendidly utilized, and those that antagonize achievement. Attention is now being given to agents and conditions that favor phagocytosis, and the group of *opsonins*, so-called because they prepare the food for the phagocytes, is prominently

before the scientist. These are very varied, differing with each disease, with the germs and even individuality of each victim, and with each invading microorganism, and the as yet somewhat indefinite knowledge of them is leading forward in the lines of diagnosis (by agglutination), of prognosis, and of therapeutics.

"Accessory to the action of the opsonins is the improvement in the circulation of the tissues invaded by the bacteria, and whether this is affected by the time-honored fomentations, frictions, rubefacients or massage, by Bier's method of dilating the capillaries by cupping or damming back the blood, by Wright's system of lessening the plasticity of the blood and lymph by medication, or by other means, the question of success or failure will often depend on the skillful and well-adjusted application of such indispensable accessories.

"A new and promising departure in therapeutics consists in the introduction of electrolysis. It has long been known that acids and radicals are evolved at the positive electrode, and bases at the negative one. Now we can avail of this to set free chlorine in a tumor from a golden needle varnished except at the point: the tissue is coagulated and destroyed and finally absorbed. Pure nascent iodine is similarly introduced into enlarged glands where the relatively very minute amount, being uncombined and unweakened acts, without irritating yet with great effect. In neuralgia and rheumatism, salicylic acid can be introduced into the tortured tissue in infinitesimal amount giving prompt results. In anaerobic infection oxygen can be liberated in the tissues to the discomfiture of the microbial invader. Why may not this local treatment by electrolysis become the true line of triumph over many intractable disorders? It promises to furnish a far safer and more effective local treatment for many affections which have been long met by a general, and, sometimes injurious saturation of the entire system with drugs. But, to apply it, the practitioner must be an accomplished chemist, toxicologist, therapist and electrician.

Veterinary Education.

"Veterinary Education has become a burning question, which cannot be extinguished, but blazes up at each annual meeting as well as in our faculties' organization. In one word, it may be asserted that the dispute cannot be settled until we advance the requirements for admission to the profession approximately

to those exacted in the sister profession of human medicine. After many futile attempts, extending over as many years, in the Empire State, we twelve years ago sought and obtained a statute adapted from the law then in force for regulating the practice of human medicine. It provided similar requirements for matriculation, a curriculum of three years which must be approved and accepted by the Education Department of the State Government, a degree conferred by such a N. Y. State-endorsed college, and a license to practice conferred after successful examination by the Education Department. This remained inferior to the medical requirements in that it imposed a curriculum of but three years instead of four. This Statute set the Empire State apart from and above all others in its veterinary education, and soon complaints poured in on all sides. Graduates of schools having practically no matriculation requirement and but ten or twelve months of college study, joined with those having a fair entrance requirement and a college course of three years. It was claimed that any one having a veterinary degree from any college should have liberty to practice in New York, a strange demand, truly, seeing that the State must then grant to aliens what she denied to her own citizens. Then it was claimed that the old practitioner from another State should be welcomed to practice in New York without evidence of preliminary school education, and without an examination to test professional acquirements. This was worse than the first claim. It would admit the most poorly educated man, with the shortest and most imperfect college course, or with none, if he had spent some years in alleged practice in another State. Then came the plausible demand for reciprocity. The license granted by an official examining board in one State must be accepted in every other State, including New York! Again, it was urged that a graduate of a three-year veterinary college should be examined for license in New York without fulfilling the New York requirements for matriculation. Anything, no matter how illogical, to break down the New York statute. In every case the outsider proposed to grant special privileges to veterinarians educated or practicing outside the State, while denying them to those educated and graduated within the State.

“In seeking reciprocity or a *modus vivendi* in such a matter there are but two possible methods—either grade the requirements exacted in outside States up to the standard of New York, or grade the New York standard down to the lowest outside.

The real question is, *shall we grade up, or shall we grade down?* Must the veterinary profession keep pace with the advance of the twentieth century, or can it afford to recede? The latter course has been favored in what might well be considered as unexpected quarters. At the last annual meeting of the N. Y. S. Veterinary Medical Society a motion was introduced looking toward the reduction of the standard of veterinary education in New York. This was fortunately defeated. At a recent meeting of the Veterinary Medical Association of New York City, a motion disapproving of our State law was carried, after appeals had been made, by its known enemies, invited from outside the State, while New York State advocates of the law had been left out.

"Every one must be allowed to act out his own convictions in this matter, but for the same reason any one with enlightened judgment is in duty bound to give a reason for the faith that is in him, and with all due respect for the views of others, to lay before them the reasons for thinking otherwise than they do. Under present conditions, I feel that I would be false to the trust you have reposed in me, if I should seek to evade such a manifest call of duty.

Demand for Better Sanitary Service.

"More than ever before, the world needs the sanitary services of well-educated veterinarians, and is becoming increasingly solicitous for the highest grade of such service. This is shown in the statutes enacted by State after State for regulating veterinary practice, and for securing to the stock owners a guarantee of education and skill on the part of its veterinary practitioners. It is shown in the increasingly searching examinations imposed on candidates for admission to veterinary service in the army, in the Federal civil service, in State, municipal and district service. The opponents of the higher education should study the results of such examinations in their relation to colleges having the higher requirements, and to those having the lower. They would find that the successful men were, in a very large majority of cases, the representative of higher education and preparation, while the unsuccessful represented the lower grades in both. I invite the comparison. I am dealing in no *a priori* argument. I appeal to the records.

"I am convinced that if a false sentiment for colleges that have allowed themselves to be left behind in the race of improve-

ment, and the supposed pecuniary interests of such colleges, could be eliminated from the discussion, few if any of its present inveterate opponents would longer object to even the New York State law on the ground of excessive requirements.

"The increasing demands exacted of aspirants to public veterinary service mark an epoch in which veterinary education must respond to such demands, or be relegated to neglect. The accomplished pathologist and sanitarian of animals is alone worthy of public confidence as a guardian of public health where veterinary sanitation is involved. The veterinarian is the only logical or safe officer to be charged with the control of animal diseases that are dangerous to man, yet, if the public is to entrust him with this duty, it must be first assured that the veterinarian in question is equally accomplished in all that pertains to these diseases in the lower animals as the physician is in regard to the same affections as seen in man. If, on the contrary, the veterinarian has had but a scanty school education, and is quite devoid of knowledge of those modern tongues in which the most recent advances are often first recorded, and if he has had a professional curriculum of but ten, twelve or eighteen months, with practically no laboratory training, can he complain if his special merits and experience are set aside in favor of the medical man who has had at least a high school education, followed by four years of study in a medical college, including extensive laboratory training? If we would assert our fitness and right to deal, in the case of animal, with diseases common to man and animals, we must be ready to show the general public that our education and training will suffer nothing by comparison with that of the modern medical graduate. We should be honest with ourselves in this matter, basing our claims on a better training and a special fitness for dealing with these diseases as they occur in the lower animals, but no less on a training in the pathology, etiology, and prophylaxis of every such communicable disease, as clear and definite, as profound and accurate for the affection in animals, as is possessed by the best medical man with reference to the same infection or malady in man.

"Complaint has been made that official test examinations lack in the important element of direct personal contact between examiner and examined. It cannot be denied, however, that the accomplished man can furnish satisfactory written answers, while the uneducated candidate cannot. The practical test was omit-

ted from our New York Statute because the latter was based upon the medical law of license, and because its insertion would have impaired the force of our plea for equivalent regulation, and might have entailed one more defeat of our measure. But, even as it stands, a practical test is imposed. The candidate must be a graduate of a veterinary college approved and registered by the Education Department of the State Government as being up to the required standard. No such college worthy of the name will fail to apply the test of practical work and examination. For the college that does its duty the practical test should carry no dread, while, to the candidate of the college which fails in its duty, both written and practical examinations are perilous. We have not yet reached perfection by any means. But we have taken a most important step; we are now ready to welcome the practical test in the examination for license, as a further step in advance; but never can we endorse the abandonment or depreciation of our written entrance or licensing examinations.

"We all know how the average low estimate of the veterinarian has so often led to the employment of medical men to do veterinary State work, and how much the community has suffered from this attempt to block a square hole with a round plug. Even our New York Agricultural Law provides that 'the commissioner may employ such and so many *medical and veterinary* practitioners * * * as he may deem necessary.' Precedence is given to the *medical man*, and, if this is the case with our exacting veterinary requirements in New York, what may be expected in the case of States with incomparably lower requirements?

"But it is not in the matter of communicable diseases alone that the veterinary official is called upon to protect the public health. He must be capable of recognizing the presence in animal food of the toxic products of disease in the lower animals, whether these may be toxins from disease-germs, leucomaines or albuminoses from the disordered body cells and tissues, or the poisons that are produced by the growth of saprophytes and the occurrence of decomposition or metabolism. To determine the existence of these, or of any one of them, in an individual case demands the education and skill of the comparative pathologist, and not simply the restricted view of the physician instructed along one line and in the pathology of one genus of animal only. But the logic which reserves this field for the expert veterinarian

remains valid only so long as the veterinarian is at least as much an expert in the whole field of the pathology and sanitation of the lower animals as the physician is in the case of the pathology and sanitation of the human being. The mere name of veterinarian is not a philosopher's stone to transform the base-metal ignorance of the bearer into the true gold of science and skill, and unless that name is upheld so as to express the equivalent of the best of the twentieth century expert knowledge of veterinary pathology it can only become a term of reproach, and the unfounded claim, which is sought to be based on it, a mark of merited contempt. To successfully retain the sanitary functions claimed for him, the veterinarian must be really an expert in all that pertains to animal pathology—in geology, soils, waters, sites, climate, forages and all botanical products; in genera, races, and breeds of animals, their dietetics and ameliorations; in buildings, ventilation and sewerage; in the physiological chemistry of the animal body and its products, in its metabolism as affected by food, air, exercise, electric storms, disease and every conceivable condition that will affect health or function; in the microbes which are the primary causes of fermentations and the chemical products which are the immediate factors in the fermentative changes, in the thousand conditions which affect the food supplies of man and beast.

Veterinary Education and Animal Health.

" All this bears directly on the purely veterinary work of the restriction and extinction of contagious, parasitic and other communicable diseases among animals themselves. This is and should be the exclusive field of the expert veterinarian and the veterinarian alone. There is here no room for the sophism that because an infection is communicable to man, the physician of man is called upon to deal with that infection at its source in animals though he is profoundly ignorant of its phenomena, course, pathology and prophylaxis in our zoölogical inferiors. From the plagues that are restricted to the lower animals we need have no apprehension of the colonization of a living germ in the human system and of its propagation from man to man in the form of a pestilence. In all such purely animal diseases the main perils to man consist in the deficiency or deterioration of meat or milk, the abundance and quality of which are essential to the well-being of the community. Such deficiency may deteriorate the health of the human population and largely under-

mine the local or national prosperity. But the remedy must be found in an appeal to the veterinary experts who are highly educated in the individual animal plagues which cause such widespread destruction. If the people or the government defy science and reason and seek help from inept experts, from laymen, from the medical profession, or even from ignorant and untrained members of the veterinary profession, only one outcome can be expected, and that an unhappy one.

Veterinary Education and Animal Industry: Political Economy.

"But again, the comparative pathologist and sanitarian, dealing with our vast possessions in domestic animals, estimated at \$2,000,000,000 in value, is a factor in political economy which cannot be lightly set aside nor undervalued. In dealing with the great aggregate of domestic animals, he holds in his hands the future prosperity of the nation, namely, the economic production and maintenance of the live stock, the enrichment and fertilization of the soil by their products, the abundance and cheapness of food materials, and the consequent encouragement and stimulation of every human enterprise. He has primarily to do with the live stock interests and these interests interpose a limitation which must largely dominate his course. The primary rights of the stock-owner cannot be lightly invaded. He is one of the most important factors in the economic world. His property cannot be confiscated for the public good without due process of law based on an assured prospective public profit to be derived from the act, nor without a righteous indemnity for the possessions taken and the business infringed. To meet this the expert veterinarian must be fully and definitely instructed in existing statutes bearing on the subject, and he must have a clear idea of what new statutory measures may be needed to render his work effective under special conditions of locality, animal industry and trade. That fundamental principles bearing on such sanitary work have been too often shamefully ignored in the past, is no reason why a similar injurious unreason should dominate in the future. We are educating the veterinarian for the twentieth century, not for the nineteenth, nor eighteenth. If our veterinary graduate cannot grasp the vital questions of to-day and to-morrow, we have failed in our effort, and our alumnus is destined to be set aside as an obsolete figure.

"If I can rightly interpret the signs of the times, we are entering on an era of reform, in which many of the hoary wrongs

of the past are to be righted, in which the mere favored place-holder is to be set aside for the public servant best fitted for the duty demanded; and in which the faithful fulfillment of the trust will be the condition of continued employment. Facing this future, can we hope or expect that veterinary medicine will secure and maintain its proper place in the community unless we set a higher standard of attainment than we have in the past? In all future sanitary work the stock-owner's interests must be allowed full representation and influence, as must no less the interests of the general community and of the coming generations, and in harmony with all and giving just balance to each, must be the work of the official veterinarian, whose command of the situation will be exactly in ratio with the acknowledged soundness and depth of his expert acquirements. The scientifically educated agriculturist of the future will see no use in this field for the poorly educated veterinarian, recognizing that he is lacking in the science and economy in which he himself has been instructed.

Veterinary Education as Accessory to Laboratory Work and Research.

"The busy practitioner, no matter how highly educated, can not always carry out necessary laboratory methods. He cannot always make analysis for the common inorganic poisons, much less for the more subtle organic ones; he cannot always make blood counts, nor bacteriological, protozoan, entozoan nor opsonic blood examinations in questionable cases; he cannot always differentiate microscopically between tuberculosis and actinobacillosis; he cannot in all cases demonstrate the presence of Negri bodies in the brain, and of proliferating cell groups in the capsules of ganglionic nerve cells; he cannot have by him the means of applying the Röntgen or Finsen rays; he cannot perhaps resort to inoculation tests in cases of difficult diagnosis, and in a hundred other cases he may not be able to enter personally and unaided into the field where modern science calls. But he must have an intelligent acquaintance with one and all of these methods, and know when he can call in assistance from the laboratory or elsewhere to clear up the uncertainty of his case. And he must know how to secure and ship material in a condition in which it may be utilized on arrival with reasonable prospect of success. How often now is material delivered in a condition which renders it absolutely useless for purposes of investigation

or diagnosis! And a priceless opportunity is absolutely and lamentably lost.

Educated Practitioners and Expert Advice.

"In veterinary as in human medicine the whole field cannot always be most fully, accurately and profitably exploited by the one practitioner. There is and will always be, room for the specialist, and for the man of the largest, broadest and most accurate knowledge and the widest experience. But the value of expert consultation will depend largely on the theoretical knowledge of the practitioner at whose instance he is called in, as he by his opportunities for observing the antecedents, environment, inception, symptoms and progress ought to be able to protect the expert against hasty or unwarranted conclusions. If therefore the regular attendant should lack somewhat of the experience, and accurate and acute knowledge of the expert, he cannot afford to be deficient in the theoretical acquaintance with the whole field of veterinary science. It is only in this way that he can justly and permanently claim the provision of the State law which protects him in his practice.

The Student's Relation to the Higher Education.

"*Preliminary Requirements.*—It is indisputable that success in professional studies is largely dependent on the facilities that can be provided for acquiring a mastery of the subject in hand. By a training in English and philology the nomenclature in medicine is easily appreciated as regards its root, root meaning, and applicability. A fair knowledge of Latin and to a less extent of Greek, or a study of the root words in Latin and Greek with their derivatives in English (including medicine) enormously facilitates medical study. Without this each word and its meaning must be retained by a hard effort of memory, whereas with it the primary root-meaning is transparently on the surface, and recognized without effort. It follows without argument that of two minds with equal native power, more will be accomplished by the one which is not subjected to the conscious and severe effort of memory with each word and which therefore escapes from the fatigue and exhaustion which is the inevitable lot of the other.

"In the same way the man is better fitted for his work, who can read its literature in one or more of the modern tongues in which much valuable material is earliest, most fully, and most

correctly printed. He can escape the drawbacks of delay, faulty translation and proof-reading which beset the less liberally educated student.

"The student who enters a present-day class in chemistry is seriously handicapped if unacquainted with algebra and unable to construct and use algebraic formulæ.

"The more we improve our veterinary curriculum, the more imperative becomes the demand for a better preparatory education, for the greater the number of subjects to be mastered, the more imperative it is to be able to do this with a minimum of effort and with less mental strain and exhaustion.

"As the student advances, the subjects and strain increase, and in research the disadvantages become more and more patent. After strenuous application and successful work, he is liable to find that the subject has been already elucidated and his aspirations and hopes of credit and fame are blasted. Even if the first to make a discovery, it is difficult for him to ascertain how much had been already known, and to place his work before the public and to secure for himself the measure of credit to which he is justly entitled.

"The rapid advance is not unattended by danger even to the student. The worship of new methods naturally obscures the old, and threatens to cast them into oblivion. The laboratory worker, of necessity almost a young man, and little familiar with the old, is tempted to train students in a one-sided track, and much of the lore of the past, which the modern can never fully supersede, is in danger of being lost. Let us not forget the Latin aphorism—*Festina lente* (*hasten slowly*); let us not abandon our priceless *armamenta* of the past, but let us not fail to add the equally priceless discoveries of the present. To lag behind the advances of our age would be suicidal; to carelessly abandon the treasures of the past which have to-day lost none of their real value, would be unspeakable folly. Science should be our guiding star, but we should strive at every step to preserve the undimmed light of the past and combine it with the shining effulgence of the present.

The Experienced Practitioner's Relation to a Higher Education.

"The raising of the requirements for admission to the profession cannot fail to have an elevating and beneficial influence on the profession as a whole. It means that from this time on the legal accessions to our ranks must be men of mental capacity,

grasp, and training, men better fitted to deal with such problems as confront us in our modern life, and instructed in the whole range of modern comparative medicine, men trained to grapple with the multitudinous questions of the most varied veterinary practice, in city or country, at home or abroad, with breeding, selection, development and training, with dietetics and hygiene, with infection and its extinction, and exclusion, with trade conditions and inspections in abattoirs and in transit, with transient and permanent immunizations, with the preservation and sanitation of milk and other animal products, with all conditions that make for improvement, physiological activity, rapid development, and profitable animal husbandry, with all toxic, inimical, or restrictive conditions, with every question that makes for good or evil, for advancement or retrogression in live stock industry. Much of this the old practitioner has learned in his well-spent life; much also he can only acquire, like the student, by assiduous application in the study or laboratory. He has a certain advantage in long and familiar acquaintance with the general phases of the live-stock industry, which like the preliminary education of the student, though in a different way, renders it easy to seize, understand and utilize much of the newer medicine, but he must not allow himself to grow old, he must not indulge in any lax nor *laissez faire* habits of life, he must remain a student and an earnest one to the end of his days if he would not be left behind in the arduous race of the future.

"As the profession becomes more cultivated and more leavened by modern science and skill through the accessions of up-to-date trained men, the public estimate of the profession as a whole is elevated, and this confidence and trust extends more or less to every member. There is often a not unnatural resentment, on the part of an old practitioner, at all this restless activity, at this reaching forward after the newer and better, at this disturbing of his settled habits, and contentment. But it is one of the features of this marvelous age that no one can be allowed to stagnate, the spirit of advancement is in the air and we must press toward the van if we would not be left behind.

"Stagnation in the veterinary profession means death, and no vested interests, no kindly sentiment toward an old college, which has failed to keep up with the advance of modern medicine, can be allowed to stand in the way. Modern medical and veterinary education becomes increasingly and ominously expensive, the costly laboratories must be maintained, and their

no less costly supervision, the hospital and hospital appointments, the rooms for research and experimental observation.

"All advanced medical colleges recognize this fully. They no longer profess to maintain the expenses by students' fees. Private endowment, or municipal or State support are necessary conditions of existence. If medicine is one, the veterinary branch can no more than the medical be left to an insufficient support. We see the recognition of this on all sides, Ohio, Washington, Kansas and Iowa have appropriated State funds for the teaching of veterinary medicine and each offers a veterinary degree. Michigan, Missouri and other States have a similar purpose in view. New York in 1895 furnished \$150,000 to establish a veterinary college, with \$25,000 a year to conduct it, increased in the last Legislature to \$30,000. Pennsylvania has virtually secured through State and private benefaction \$500,000 to be made available for veterinary education and research. The Chicago packers have given \$250,000 for veterinary college buildings and equipment, and the State has appropriated \$30,000 a year for their support. These movements indicate that the public is waking up to the economic advantages of veterinary medicine, but they indicate even more fully the public appreciation of the call for advancement of the profession and the elevation of its standard. It is for us, the great body of the profession, to rise to the occasion and add our impetus to the common progress. Private, proprietary veterinary colleges have been in the past sources of income and prosperity. That day is well nigh past. Hereafter they can no longer stand on the old ground and follow the old methods. They must secure through private or public benefactions the means of bringing their system up to the requirements of the day or they must be swept away in the onward march of twentieth century progress. Any hesitation to go forward, or any wavering or disposition to go back from an advance position already attained, must be to the disadvantage of their students, and to the lowering of the reputation of the entire profession which will be estimated according to the status of the imperfectly educated men added to its ranks; it must contribute to lower the estimate set on every regular practitioner in the land; it must invite to odious comparison of us in presence of the sister profession of medicine—turning aside from us to the physician all important work in comparative sanitation; worse than all it must rob us of the confidence of the future stock-owner.

"We cannot afford to shut our eyes to the fact that, more than ever before, our great agricultural community is being liberally educated at public expense. New York is just completing at Ithaca a splendid agricultural college at a cost of \$250,000 and has appropriated \$150,000 for its next year's maintenance, to be added to the liberal sums previously provided by the State and Nation. Not satisfied with this, the same State has appropriated \$60,000 for an agricultural college at Canton, St. Lawrence Co. Matriculation in the agricultural course demands four years of successful high school work and the college course for an agricultural degree requires four years more of successful work in college. Then fellowships are available to enable the promising alumnus to continue his studies for two years longer, six years in all, with the object of securing an advanced degree, so that our future agricultural alumnus promises to be a very accomplished person.

"The Federal Government spends many millions yearly in the work of agricultural education and progress. A number of States, in the West especially, give to agricultural education a fixed percentage of the taxes, so that as time passes and States develop in material prosperity, the funds available for this purpose will increase in ratio. There is thus assured, for the future, a progressive increase in the means and quality of agricultural education.

"Can we hope that the agriculturist, educated in this liberal way, will respect or support a profession which attempts to block the wheels of veterinary progress, or which would vote for a return from an advanced and advancing position to the imperfect and outgrown education of a time when our universities disdained to have a chair of agriculture, of veterinary medicine, of mechanical or civil engineering, or even of chemistry?

"We stand to-day at the parting of the ways. The opportunity is before us to advance with the times; to crowd forward with the on-rushing army of progress; to hold our place side by side with the newer medicine, and still newer agriculture; to keep abreast with modern and rapidly advancing sanitation. If we fail to seize our opportunity, we doom ourselves to decadence, to neglect, to be brushed aside while others enter into our rightful heritage.

"The wise choice of the profession as a whole must be the outcome of the choice of the individual practitioners. As we can-

not delay the oncoming tide it is the part of wisdom to avail of it for our own profit. The movement for a higher standard seeks in no way to push aside the experienced practitioner. It reserves to him all the rights, privileges and immunities which he ever possessed, while it brings him the additional honor of belonging to a profession that can no longer be despised or neglected. He can take his place side by side with the members of other learned bodies. It is the privilege and duty of every worthy practitioner to add to his long accumulating experience and skill a personal study of the newer science, so that in his case the new honor will not be a reflected one only, but one based as well on added personal worth. The man who has worthily filled his professional sphere through a lifetime should find no difficulty in maintaining an estimable place in the future veterinary medicine.

"The greatest danger to the veterinary profession is the apathy of the practitioner. This association has 600 members when it might very well have 6,000. The 600 include many of the best and most ambitious practitioners, yet in numbers it can hardly be called representative. Then the licensed body of practitioners fail to show that jealousy of illegal practice which the spirit of the law demands. Leaders amongst us claim that if a man cannot drive out the unlicensed man, by opposing to his pretensions his own greater skill, that all appeal to the law is useless. They forget the claim of the quack that he could always count on nine fool clients for the one which the regular practitioner secured. They further forget that the country is literally nostrum-ridden and that no one is so financially prosperous as the shrewd and unscrupulous purveyor of patent medicine. I make the further charge that able and prosperous practitioners violate State laws in spirit and in fact, in employing as active assistants men who have neither degree nor license, and some even open offices at wide distances apart under their own names, but where the veterinary practice is conducted by non-licensed men, who pose as their assistants. 'It is an ill bird that fouls its own nest,' and no less is he a blameworthy beneficiary who despises the generous recognition and protection given by his State and who deliberately sets himself to undermine the statutes made for the protection of his profession. For such an ungrateful recipient there is needed another statute, with a merciless penalty for the ingrate.

The Higher Standard of Education in Relation to the Supply of Veterinary Graduates.

"The criticism has been made that the higher standard of education in New York has driven away many prospective students who would otherwise have sought to enter the profession, and that the actual graduates are not numerous enough to fill the constantly occurring gaps in our ranks. This always happens when higher entrance requirements are imposed, as candidates require a year or two more to prepare for admission. But just as constantly do the numbers increase again, and even exceed the former classes entering on lower requirements, provided that the education offered is of a better kind. Our experience in the New York State Veterinary College fully sustains this rule. In 1904 on 24 academic counts we matriculated 58 freshmen, fully as many as we could do justice to with existing equipment. In 1905 on 48 academic counts we had but 19 freshmen and there was raised a loud hue and cry against the higher requirements. In 1906 on 60 academic counts (about equal to 48 of the year before) we matriculated 32 freshmen, a larger number than we had matriculated in 1902. For 1907, I can only say that applications are largely in excess of those of 1906 and there is every indication that we must soon appeal to the State for a material increase in our appropriation, or cut down our classes by imposing the long anticipated and needed fourth year of veterinary college work. Our remarkable increase, it must be noted, is being steadily made in the face of the offers of colleges outside New York to take students on a common school education or less, and to graduate them after a curriculum of 10, 12 or 18 months as compared with our 27 months' course. In the face of every drawback our course has been fully justified by the result, and the outcome cannot fail to be beneficial to all concerned. The science will be advanced and elevated, the client will get better service for which he can afford to pay more liberally, and the practitioner will gain a high respect and secure a better pecuniary reward. If our object were merely to crowd the class rooms and secure a temporary reward from students' fees the aim might be still attained for a few years longer, but it would be gained at the expense of lost reputation for the profession, of estrangement of the advancing agriculturist, of the steady diminution of the practitioner's income, and finally, of the 'turning over of our vineyard to others who would bring forth the fruits thereof.'

"This may be affirmed as to the duty of the American Veterinary Medical Association in this matter: 1. It cannot dictate to States what they shall do. It can exert a moral influence only. 2. It can set a standard for admission to membership in its own body, and this should ever aim at grading up; never at grading down. 3. Its aim should nevertheless be to extend greatly its own membership so as to embrace all worthy members of the profession on the Continent, and thus to increase its own influence. A close corporation of mutual admirers is not the ideal. The Association must be truly *American*, as the name implies. 4. Uniformity of standard in education and graduation is desirable, but any attempt to lower a standard already locally attained is a fatal move. This association can afford to admit to its membership worthy and able men who have been denied the privileges of a good preliminary and college education and who have risen above their disadvantages and made their mark, but it cannot use its influence to lower by an iota the high standard established in a State.

Veterinary Civil Service.

"The advancement of the Veterinary Civil Service is a source of satisfaction to every right-minded veterinarian. The great extension and improvement of meat inspection places the United States in the very forefront of the nations in this important sphere. As in every other field there is much room for advancement, such as in the line of intimate coöperation, of Nation and States in tracing and dealing with dangerous infections and parasites, indigenous and exotic, in every locality where it has become colonized. This demands that each individual State shall be brought up to the level of the Federal Government in the matter of veterinary service, so that as far as sanitary science and police is concerned they may complement each other and act as one body for the extinction, or restriction of communicable diseases. The same is true of municipal and local veterinary sanitary service. Our State autonomy forbids the placing of the entire veterinary civil service under the direct control of a central bureau, but every State, municipal or district organization, should be so affiliated with the federal bureau, that the work as a whole will prove as effective as if it were all directed by one central head. As in Europe a beneficial international comity is maintained, so in America a federal and

interstate trust and statutory coöperation is essential to a rational practice and abundant success.

Veterinary Service in the Army.

"The status of the army veterinarian has long been an unsatisfactory one, but delay should not breed despair. Last year there seemed to some a reasonable ground for hope of a successful issue, to the bill before Congress. But as it turned out the bill with all its good qualities, contained an element of injustice to faithful veterinary officers, that could only be rectified by an amendment, which would inevitably defeat the measure in the Congress then sitting. It further developed that the bill before the House would fail to receive attention, not from any demerit of its own, but from simple lack of time, so it was deemed best to bear our ills for one year more, and then come up with a bill which would harmonize all interests, securing the approval of the General Staff, the Secretary of War, the friends in Congress, the army veterinarians, and the great body of the veterinary profession.

"But I have held your attention too long. Our profession in America stands as never before, in numbers, in skill, in public estimation; our association meets in the center of the United States, in the great Mississippi Valley where it can draw upon a vast body of veterinary practitioners, each zealous for the good of veterinary medicine; we have in the program of our meeting papers on a great variety of subjects of urgent importance, and I bespeak for these the calm and judicial consideration which should make the Kansas City meeting a beacon of protection and real progress for our advancing future."

THE GREAT ATTENDANCE.

As has been the custom for a number of years, the calling of the roll was dispensed with, and a registry bureau was established at the entrance, where it was presided over by Dr. B. F. Kaupp, of the local committee, who endeavored to have every member and visitor sign a card giving his name, degree, address, and his relation to the meeting—whether member or visitor. An innovation this year was the publication, daily, of a list of all who had registered, arranged according to States, and it was suggested that this could be improved upon another year by having each badge bear a number to correspond with a like number in

this directory. By this means one could refer to his directory and get the name and address of any person bearing a numbered badge.

The number of members and visitors registered at Kansas City was almost double that of any previous year, and we fear it will be many years before the record of 1907 will be equalled. From the published lists we have arranged the following lists of those in attendance:

ALABAMA—*Members*: C. A. Cary, Auburn. *Gentlemen Visitors*: T. D. Jackson, Talladega.

ARKANSAS—*Gentlemen Visitors*: Wm. A. Fry, Fayetteville; W. L. Lenton, Fayetteville; D. B. Morgan, Fayetteville.

CALIFORNIA—*Members*: P. H. Browning, San Jose. *Gentlemen Visitors*: R. A. Archibald, Oakland; David F. Fox, Sacramento; H. A. Spencer, San Jose; E. R. Sparks, Los Angeles.

COLORADO—*Members*: F. W. Culver, Longmont; Chas. G. Lamb, Denver; Mark White, Denver. *Gentlemen Visitors*: Walter S. Craig, Delta; John Gross, Creede; I. E. Newsom, Denver; A. J. Savage, Colorado Springs; E. J. Foreman, Trinidad.

CONNECTICUT—*Members*: Thomas Bland, Waterbury; G. W. Loveland, Torrington; Richard Lyman, Hartford. *Gentlemen Visitors*: E. R. Dimock, Tolland; Chas. F. Roberts, New Haven; Wallace F. Vail, Greenwich; Robert E. Warren, Bridgeport.

DISTRICT OF COLUMBIA—*Members*: A. D. Melvin, Washington; John R. Mohler, Washington; R. A. Ramsay, Washington; F. V. Wilcox, Washington.

GEORGIA—*Gentlemen Visitors*: W. A. Scott, Columbus. *Lady Visitors*: Mrs. W. A. Scott, Columbus.

ILLINOIS—*Members*: I. K. Atherton, Peoria; A. H. Baker, Chicago; L. Enos Day, Chicago; O. E. Dyson, Chicago; D. Arthur Hughes, Chicago; Joseph Hughes, Chicago; W. W. Lichty, Woodstock; J. Y. Nattress, Delaven; H. A. Pressler, Fairbury; E. L. Quitman, Chicago; John Scott, Peoria; A. M. Wray, Richmond; L. A. Merillat, Chicago. *Gentlemen Visitors*: I. H. Britt, Raritan; Clifford Burbridge, Nebo; F. C. Christian-son, Chicago; Robt. Doty, Murphysboro; Jos. P. Dunn, Chicago; Alex Eger, Chicago; R. S. Houghton, Patterson; J. M.

Kaylor, Barry; Victor E. Kovar, Chicago; W. J. Martin, Kankakee; C. C. Mills, Decatur; H. C. Milnes, Chicago; R. E. Nesbit, Lincoln; Chas. A. Pierce, Elgin; H. P. Rasmussen, Chicago; H. M. Rinehart, Blandinsville; H. R. Ryder, Chicago; W. H. Weathers, Magnolia; W. H. Welch, Lexington; L. C. Tiffany, Springfield. *Lady Visitors*: Mrs. A. H. Baker, Chicago; Mrs. L. A. Merillat, Chicago; Mrs. H. A. Presler, Fairbury; Mrs. E. L. Quitman, Chicago; Mrs. W. H. Welch, Lexington.

INDIANA—*Members*: W. J. Armour, Goshen; E. M. Bronson, Indianapolis; D. A. Davison, Princeton; Jos. W. Klotz, Noblesville; G. H. Roberts, Indianapolis; Jas. M. Tade, Vincennes; O. G. Whitestone, Huntington. *Gentlemen Visitors*: O. L. Boor, Muncie; A. W. French, Fort Wayne; J. J. Herron, Tipton; G. G. Ferling, Richmond. *Lady Visitors*: Mrs. O. L. Boor, Muncie; Mrs. D. A. Davison, Princeton; Alice M. Davison, Princeton; Mrs. A. W. French, Fort Wayne; Mrs. J. W. Klotz, Noblesville; Miss M. Roberts, Indianapolis; Mrs. O. G. Whitestone, Huntington.

IOWA—*Members*: H. A. Alcorn, Adair; S. H. Bauman, Birmingham; W. Elery, Anita; J. W. Griffith, Cedar Rapids; R. R. Hammond, Cherokee; C. J. Hinkley, Odebolt; G. A. Johnson, Sioux City; P. Malcolm, New Hampton; J. H. McNeil, Ames; D. H. Miller, Des Moines; C. E. Stewart, Chariton; Geo. M. Walrod, Storm Lake; A. L. Wood, Hampton. *Gentlemen Visitors*: A. J. Abarr, Diagonal; R. D. Abarr, Blockton; Thos. E. Anderson, Bedford; A. Beck, Auburn; Geo. W. Bowker, Odebolt; W. L. Boyd, Fairfield; C. A. Bradley, Marion; Jos. Brigg, Union; W. W. Bronson, Wyoming; G. L. Buffington, Brooklyn; Geo. A. Dodge, Northwood; Wm. Drinkwater, Monticello; W. R. Fullerton, Dubuque; I. W. Edwards, Steward; Henry Hell, New Liberty; Edward Higgins, Cumberland; L. Jennings, Massena; W. M. Lee, Mackson; J. G. Parslow, Shenandoah; E. G. Piper, Ida Grove; Craig Malcolm, New Hampton; F. F. Parker, Oskaloosa; J. S. Potter, Iowa City; Chas. Rowe, Winterset; O. G. Ruffcorn, Defiance; J. O. Simcoe, Davenport; W. E. Sharp, Newton; H. M. Stevenson, Perry; C. H. Strange, Ames; W. W. Talbot, Oskaloosa; J. Vincent, Shenandoah; A. C. Woods, Council Bluffs; Dr. N. A. Kippen, Independence. *Lady Visitors*: Mrs. R. R. Hammond, Cherokee; Mrs. C. J. Hinkley, Odebolt; Mrs. N. A. Kippen, Independence; Mrs. P. Malcolm, New Hampton; Mrs. F. F. Parker, Oskaloosa; Mrs. G. A. Johnson, Sioux City.

INDIAN TERRITORY—*Gentlemen Visitors*: C. C. Kins'ey, Tulsa.

IDAHO—*Gentlemen Visitors*: Ray B. Hurd, Payette.

KANSAS—*Members*: L. R. Baker, Kansas City; E. M. Bates, Coffeyville; G. C. Furnish, Hiawatha; Sidney L. Hunter, Ft. Leavenworth; Chas. H. Jewell, Ft. Riley; J. V. Lacroix, Hiawatha; W. J. Lacy, Parsons; E. Makins, Jr., Abilene; Alexander Plummer, Ft. Riley; W. H. Richards, Emporia; Burton R. Rogers, Manhattan; Chas. Saunders, El Dorado; C. J. Sihler, Kansas City; M. A. Richards, Emporia. *Gentlemen Visitors*: L. P. Arnott, McPherson; Geo. F. Babb, Kansas City; F. M. Baldwin, Horton; C. L. Barnes, Manhattan; E. E. Biart, Leavenworth; N. V. Boyce, Kansas City; F. W. Caldwell, Wamego; C. B. Clement, Rosedale; B. W. Conrad, Sabetha; W. P. Colvin, Kansas City; J. K. Covert, Neodesha; Wm. P. DeWalt, Centralia; B. G. Dill, Kansas City; J. E. Driscoll, Lawrence; E. Engel, Ft. Riley; G. H. Elliott, Olathe; W. L. Elliott, Paola; Fred E. Erfurth, Kansas City; R. F. Eagle, Kansas City; T. J. Eagle, Kansas City; W. W. Eagle, Kansas City; L. R. Fauteck, Wichita; Geo. Foerschler, Jr., Kansas City; G. M. Fox, Minneapolis; D. Emerson Gall, Reserve; L. P. Gentry, Ottawa; L. W. Goss, Manhattan; Robt. Grimes, Emporia; H. R. Groome, Jewell City; J. S. Grove, Kansas City; W. J. Guilfoil, Kansas City; R. Guinsley, Allen; T. W. Hadley, Kansas City; W. J. Hart, Wetmore; Fred M. Hayes, Kansas City; H. W. Haynes, Kansas City; Jas. R. Haynes, Kansas City; J. F. Hemphill, Clay Center; Arthur Hilgardner, Kansas City; W. N. Hobbs, Holton; H. A. Horton, McPherson; E. F. Jameson, Kansas City; L. L. Jones, McCune; J. W. Joss, Hutchinson; C. B. Kern, Beloit; E. H. Kilian, Manhattan; W. T. King, Olathe; C. E. Kinney, Plainville; D. O. Knisely, Topeka; M. C. Lint, Kansas City; A. B. Magill, Blue Rapids; C. B. McClelland, Lawrence; Frank McVaigh, Kincaid; J. L. Ottermann, Kansas City; A. B. Pincomb, Lenexa; F. A. Poupirt, Leavenworth; G. F. Punteney, Kansas City; Chas. A. Pyle, Salina; A. R. Reber, Kansas City; L. T. Richards, Parsons; A. A. Shetler, St. John; D. S. Smithhisler, Harper; L. H. Thurston, Girard; H. R. Tice, Summerfield; Chas. F. Walters, Kansas City; O. O. Wolf, Ottawa; Fred Wood, Garnett; C. C. Walch, Burden; R. S. Vancel, Kansas City; T. C. McCasey, Concordia; E. E. Rose, Clay Center; F. S. Schoenleber, Manhattan; J. Oesterhaus, Ft. Riley; A. B. Maxwell, Celina. *Lady Visitors*: Mrs.

L. R. Baker, Kansas City; Mrs. N. V. Boyce, Kansas City; Mrs. Anna V. Fox, Minneapolis; Mrs. R. B. Grimes, Emporia; Mrs. E. H. Kilian, Manhattan; Mrs. C. B. McClelland, Lawrence; Mrs. Burton Rogers, Manhattan; Mrs. Chas. Sihler, Kansas City; Mrs. L. H. Thurston, Girard; Mrs. G. E. Maxwell, Parsons; Mrs. E. H. Biart, Leavenworth.

KENTUCKY—*Members*: J. W. Jameson, Paris; D. A. Piatt, Lexington; V. W. Knowles, Louisville.

LOUISIANA—*Members*: W. H. Dalrymple, Baton Rouge; H. J. Milks, Baton Rouge.

MARYLAND—*Members*: G. Allen Jarman, Baltimore.

MASSACHUSETTS—*Members*: C. H. Playdon, Reading; Chas. R. Simpson, Somerville; J. F. Winchester, Lawrence. *Gentlemen Visitors*: Myron E. Chapin, Springfield. *Lady Visitors*: Mrs. Chas. R. Simpson, Somerville.

MICHIGAN—*Members*: J. S. Donald, Bay City; Geo. W. Dunphy, Quincy; James J. Jay, Detroit; U. S. Springer, Grand Rapids; Harry E. States, Detroit; J. C. Whitney, Hillsdale; S. Brenton, Detroit. *Gentlemen Visitors*: C. N. Anderson, Detroit; W. N. Armstrong, Concord; A. C. Branson, Grand Rapids; Wilford A. Haynes, Jackson; Mr. Schaffer, Detroit; M. A. Wright, Grand Rapids. *Lady Visitors*: Mrs. S. Brenton, Detroit; Mrs. H. E. States, Detroit; Mrs. J. S. Donald, Bay City.

MINNESOTA—*Members*: Chas. E. Cotton, Minneapolis; D. M. McDonald, St. Paul; B. W. Kirby, St. Paul; R. LaPointe, LeSueur; G. E. Leech, Winona; C. A. Mack, Stillwater; M. H. Reynolds, St. Anthony Park; M. S. Whitcomb, St. Paul. *Gentlemen Visitors*: E. H. Kartrude, Hardwick; H. C. Peters, Litchfield; C. S. Shore, Lake City.

MONTANA—*Members*: A. D. Knowles, Livingston. *Lady Visitors*: Mrs. A. D. Knowles, Livingston.

MISSISSIPPI—*Gentlemen Visitors*: W. F. Willey, Pelahatchie.

MISSOURI—*Members*: Drs. Richard F. Bourne, Kansas City; F. F. Brown, Kansas City; L. D. Brown, Hamilton; J. M. Buck, Kansas City; L. Champlain, Kansas City; A. W. James, Cameron; Chas. A. Johnson, So. St. Joseph; B. F. Kaupp, Kansas City; A. T. Kinsley, Kansas City; D. B. Leininger, Kansas City; D. F. Luckey, Columbia; L. A. Merillat, Kansas City; R. C. Moore, Kansas City; H. M. McConnell, Kansas City; Frank C. McCurdy, St. Joseph; C. M. McFar-

land, So. St. Joseph; M. McNailey, St. Louis; B. W. Murphy, St. Joseph; G. B. Nicholas, Kansas City; J. W. Prentiss, Bethany, X. I. Richmond, Kansas City; J. Harvey Slater, Richmond; C. E. Steel, St. Joseph; M. A. Thomas, Weaubleau; Oscar W. Tillman, Kansas City; Arthur Trickett, Kansas City; T. E. White, Sedalia; S. Stewart, Kansas City; T. S. Hickman, Kansas City; A. L. Bailey, Kansas City. *Gentlemen Visitors:* Clifford L. Allen, Kansas City; A. Anderson, Kansas City; M. T. Bailey, Kansas City; J. S. Barbee, Kansas City; E. P. Barnhart, Kansas City; F. E. Bishop, Odessa; Horace Bradley, Windsor; S. B. Bragg, Oregon; Master Francis Brown; C. H. Bugbee, Kansas City; Geo. E. Butin, Kansas City; A. I. Button, Amos; Joe H. Bux, Kansas City; Jas. R. Cannon, Kansas City; Clifton Carter, Kansas City; Fred C. Cater, Southwest City; L. G. Clark, Nevada; Jno. W. Chenowith, Albany; S. Cole, Kansas City; H. E. Colvin, Kansas City; J. D. Cooper, Kansas City; E. D. Criswell, King City; Jim Curry, Trenton; B. C. Davis, Carrollton; Chas. Doerrie, Boonville; Master Van L. Doerrie, Boonville; W. P. Driver, Kansas City; Whig Dunaway, Kansas City; M. L. Edwards, Jacksonville; C. A. Ekstromer, St. Louis; H. C. Lewis, Nevada; Otto Emmitt, Kansas City; E. B. Empey, Clinton; M. A. Farley, Kansas City; E. F. Faulder, Kansas City; R. C. Foulk, Kansas City; H. D. Freeman, Kansas City; C. H. Gaines, Chilhowee; H. H. George, So. St. Joseph; John Gildorn, Jamespoint; J. L. Gossett, Kansas City; R. Gregory, Kansas City; A. J. Hammerstain, St. Louis; Benj. C. Harrison, Kansas City; E. F. Haven, Kansas City; I. H. Hettinger, Kansas City; Dick Hendricks, Gilman City; J. A. Hendricks, Burlington; E. M. Hendy, Jefferson City; J. L. Hickman, Kansas City; J. H. Hulse, Kansas City; A. L. Hunt, Kansas City; John Hutchison, Kansas City; Frank Johnston, Kansas City; A. C. Jones, Kansas City; T. A. Jones, Kansas City; W. T. Kander, Kansas City; A. J. Kelley, St. Louis; Whig Dunnaway, Kansas City; M. J. Kelly, Kansas City; Albert Smith Kinsley, Kansas City; J. E. Kline, Lamar; L. M. Klutz, Clinton; John S. Koen, Kansas City; Elmer Lash, Kansas City; H. J. Lawrence, Kansas City; O. R. Lipe, Kansas City; W. E. Martin, Perry; G. E. Maxwell, St. Joseph; J. M. Mayes, Kansas City; C. D. Meredith, Joplin; S. H. Moore, Sikestown; A. J. Munn, Fayette; T. J. Murphy, Kansas City; W. J. McAnnich, Butler; H. J. McCartney, Alba; E. E. McCoy, Kansas City; J. H. McElroy, Grant City; W.

H. McKinney, Kansas City; J. A. McLane, Kansas City; J. H. McLevy, Warrensburg; F. P. McNalley, Kansas City; C. A. Nelson, Kansas City; E. J. Netherton, St. Joseph; A. Newberg, Kansas City; M. S. Nighbert, Louisiana; W. E. Norden, Kansas City; Jas. M. Orford, Kansas City; J. L. Osborn, Kansas City; C. C. Parker, Kansas City; M. A. Peck, Independence; S. A. Peck, Oak Grove; Geo. W. Pell, Kansas City; O. J. Phillips, Holden; P. Phillipson, Kansas City; R. P. Poage, Shelby; Lyell M. Rader, St. Louis; R. H. Riggs, Kansas City; M. A. Sappington, Kansas City; E. H. Schaeffer, Kansas City; C. N. Scott, Mound City; S. Sheldon, Trenton; J. E. Shelton, St. Joseph; E. A. Shikles, Plattsburg; R. A. Shoemaker, Slater; Stanley Smith, Columbia; Walter A. Smith, Kansas City; F. M. Starr, Odessa; R. R. Stewart, Kansas City; O. Stingley, Kansas City; C. H. Strange, Kansas City; J. D. Thrower, Kansas City; H. E. Trawver, Kansas City; C. R. Treadway, Kansas City; W. O. Trone, Kansas City; E. A. Van Antwerp, Brookfield; E. B. Ward, Fulton; E. J. Ware, Kansas City; W. B. Welch, Marshall; C. I. Walch, Kansas City; H. H. Wolf, Maryville; J. B. Wood, Kansas City. G. W. Merker, Kansas City; A. A. Hoster, Humesville; A. W. James, Cameron; B. W. Murphy, St. Joseph; R. L. Armstrong, Kansas City; E. F. Kinsley, Kansas City; W. R. Cooper, Kansas City; C. A. Johnson, St. Joseph; J. W. Prentiss, Bethany; E. H. Elliott, Nevada; W. E. Heyde, St. Louis; H. J. Babcock, St. Louis; C. M. Cooper, Kansas City. *Lady Visitors:* Mrs. F. F. Brown, Kansas City; Miss Ruby Brown, Hamilton; Mrs. L. D. Brown, Hamilton; Mrs. L. Champlain, Kansas City; Miss Margaret Champlain, Kansas City; Mrs. P. S. Crane, Kansas City; Mrs. J. H. Dent, Kansas City; Mrs. Chas. Doerrie, Boonville; Mrs. C. H. Gaines, Chilhowee; Mrs. J. H. Gwynne, Kansas City; Mrs. A. J. Hammerstain, St. Louis; Mrs. B. F. Kaupp, Kansas City; Miss Madolin Kaupp, Kansas City; Mrs. A. T. Kinsley, Kansas City; Mrs. G. E. Maxwell, St. Joseph; Mrs. L. L. McKim, Kansas City; Mrs. G. B. Nicholas, Kansas City; Mrs. W. E. Norden, Kansas City; Mrs. S. A. Peck, Oak Grove; Mrs. G. W. Pell, Kansas City; Mrs. E. G. Piper, Ida Grove; Mrs. X. I. Richmond, Kansas City; Mrs. Rogers, Kansas City; Mrs. J. R. Schuester, Brookfield; Mrs. S. Sheldon, Trenton; Mrs. F. M. Starr, Odessa; Mrs. C. E. Steel, St. Joseph; Miss Mae Steele, Kansas City; Mrs. S. Stewart, Kansas City; Mrs. C. R. Treadway, Kansas City; Mrs. E. A. Van Antwerp, Brook-

field; Miss Nellie Young, Kansas City; Mrs. J. Harvey Slater, Richmond; Miss Belle Stewart, Kansas City; Mrs. R. F. Eagle, Kansas City; Mrs. Hattie Zimmerman, Kansas City.

NEVADA—*Members*: W. B. Mack, Reno.

NEW MEXICO—*Gentlemen Visitors*: J. M. Lawrence, Ft. Wingate.

NEW YORK—*Members*: E. B. Ackerman, Brooklyn; Roscoe R. Bell, Brooklyn; Otto Faust, Poughkeepsie; P. A. Fish, Ithaca; Frank Hunt, Jamestown; Wm. Henry Kelly, Albany; James Law, Ithaca; W. C. McPherson, New York City; V. A. Moore, Ithaca; J. L. Robertson, New York City; A. J. Tuxill, New York City; W. L. Williams, Ithaca. *Gentlemen Visitors*: C. R. Webber, Rochester. *Lady Visitors*: Mrs. Charlotte N. Hunt, Jamestown; Mrs. E. Vail, Yorktown Heights.

NEBRASKA—*Members*: J. S. Anderson, Seward; A. L. Bailey, Kansas City; John A. Berg, Pender; M. V. Byers, Osceola; G. J. Collins, West Point; Benj. F. Davis, So. Omaha; Richard Ebbitt, Grand Island; Martin Hanson, Holbrook; W. D. Hammond, Blair; Frank Jelen, Omaha; H. Jensen, Weeping Water; Chas. A. McKim, Lincoln; W. E. Nordheim, Wahoo; O. W. Noyes, Norfolk; Sigurd Oleson, Holbrook; Will R. O'Neil, Wayne; A. T. Peters, Lincoln; V. Schafer, Tekamah; Peter Simonson, Fremont; Robt. P. Smith, Edison; Lee C. Songer, Grand Island; E. F. Stewart, Beatrice; G. R. Young, Omaha. *Gentlemen Visitors*: B. J. Baker, Mitchell; G. H. Baxter, Alma; J. A. Bergan, Stratton; J. C. Bowman, Tecumseh; A. A. Brown, Giltner; B. F. Carper, Blue Hill; L. P. Carstenson, Columbus; Harry Crandall, Creighton; Henry Dechert, Rising City; Chas. M. Elliott, Humboldt; H. L. Feistner, Auburn; H. E. Foster, Falls City; R. Gabler, Pierce; J. L. Hoylman, Franklin; R. A. Huntley, Pawnee City; Eugene H. Hyland, Leigh; Chris Johnson, Hooper; E. L. Lull, Cedar Rapids; G. A. Meixel, Aurora; A. A. Munn, Kearney; I. W. McEachran, Geneva; Guy Newton, Stamford; H. V. Nothomb, Shickley; Edwin O. Odell, Central City; H. H. Owen, Wayne; E. K. Paine, Fairbury; F. E. Rathbun, Hayes Center; W. F. Randall, Stratton; R. M. Spelts, David City; J. E. Strayer, Carleton; M. D. Strong, Stromsburg; E. E. Trabert, Milford; Elmer Watkins, Stockville. *Lady Visitors*: Mrs. J. S. Anderson, Seward; Mrs. W. D. Hammond, Blair; Mrs. F. Jelen, So. Omaha; Mrs. H. Jensen, Weeping Water; Mrs. I. W. McEachran, Geneva; Mrs. Chas. A. McKim, Lincoln; Mrs. A. T. Peters, Lincoln; Mrs. F. Youle, Lincoln.

NEW JERSEY—*Members*: Jas. T. Glennon, Newark; J. Payne Lowe, Passaic; T. E. Smith, Jersey City; Wm. Herbert Lowe, Paterson; A. G. Vogt, Newark. *Gentlemen Visitors*: W. Runge, Newark. *Lady Visitors*: Mrs. Ellen Glennon, Newark; Mrs. A. G. Vogt, Newark.

NORTH CAROLINA—*Members*: Tait Butler, Raleigh; G. A. Roberts, Raleigh. *Gentlemen Visitors*: L. J. Herring, Clinton. *Lady Visitors*: Miss Matilda Steinmetz, Raleigh; Mrs. G. A. Roberts, Raleigh.

NORTH DAKOTA—*Members*: J. W. Robinson, Coal Harbor.

OHIO—*Members*: J. H. Blattenberg, Lima; Geo. W. Cliffe, Upper Sandusky; A. S. Cooley, Cleveland; T. Bent Cotton, Mount Vernon; E. H. Shepard, Cleveland; W. B. Washburn, Tiffin; D. S. White, Columbus. *Gentlemen Visitors*: W. A. Axby, Cincinnati; C. A. Clark, College Corner; Louis P. Cook, Cincinnati; S. H. Stephens, Loveland. *Lady Visitors*: Mrs. W. A. Axby, Cincinnati; Mrs. T. Bent Cotton, Mount Vernon; Mrs. Geo. W. Cliffe, Upper Sandusky.

OKLAHOMA—*Members*: L. E. Willyoung, Fort Sill. *Gentlemen Visitors*: Leslie J. Allen, Oklahoma City; D. M. Campbell, Shawnee; Sigel H. Galier, Norman; Pink H. Howard, Mangum; J. E. May, Yukon.

PENNSYLVANIA—*Members*: S. H. Gilliland, Marietta; W. H. Hoskins, Philadelphia; C. J. Marshall, Philadelphia; Otto G. Noack, Reading; F. W. Schneider, Philadelphia; W. A. Wight, Pittsburg. *Gentlemen Visitors*: H. P. Brooks, Philadelphia; C. W. Springer, Uniontown; H. P. Hoskins, Philadelphia. *Lady Visitors*: Mrs. H. P. Brooks, Philadelphia; Emma L. Brooks, Philadelphia; Mrs. W. H. Hoskins, Philadelphia; Mrs. C. J. Marshall, Philadelphia.

SOUTH CAROLINA—*Members*: Louis Friedheim, Rock Hill.

SOUTH DAKOTA—*Members*: S. W. Allen, Watertown. *Gentlemen Visitors*: A. H. Hill, Rapid City.

TENNESSEE—*Members*: Geo. R. White, Nashville. *Gentlemen Visitors*: Chas. B. Banks, Memphis; R. E. Collins, Memphis.

TEXAS—*Members*: Joseph W. Parker, San Antonio; R. Lee Rhea, McKinney. *Gentlemen Visitors*: Frank E. Barnes, Ft. Worth; Chas. D. Folse, Houston; R. P. Marsteller, College Station; E. M. Wiggs, Electra. *Lady Visitors*: Mrs. R. Lee Rhea, McKinney.

UTAH—*Members*: H. J. Frederick, Logan.

WISCONSIN—*Members*: C. J. Rhodes, Beloit. *Gentlemen Visitors*: R. S. Neer, Platteville.

WYOMING—*Gentlemen Visitors*: W. Wiseman, Ft. Laramie.

CANADA—*Members*: C. D. McGilvray, Winnipeg, Manitoba; Thos. Thacker, Renfrew, Ontario. *Lady Visitors*: Mrs. G. W. McGilvray, Winnipeg, Manitoba.

CUBA—*Members*: W. W. Dimock, Santiago de las Vegas. *Gentlemen Visitors*: Virgilio Benedicto, Havana; R. B. Ferre, Cardenas; Emilio L. Luaces, Camaguey.

NEW MEMBERS.

The total number of new members elected number 134, which is nearly thirty greater than ever taken in at a previous meeting. The various seatings of the Executive Committee were greatly prolonged in the examination of the credentials of applicants, and many were laid on the table for further investigation or were rejected outright. The following is a complete list of those elected to membership:

Wm. A. Axby, D.V.S., D.V.M. (Ohio V. C. '95; Cin., '05), Harrison, Ohio.

Charles Baynes, M.D.C. (Chic. V. C., '02), Tacoma, Wash.

John A. Berg, M.D.C. (Chic. V. C., '05), Pender, Neb.

David L. Bolzer, D.V.S. (McGill, '92), Cambridge, Mass.

Richard F. Bourne, D.V.S. (K.C.V.C., '06), Kansas City, Mo.

Chester Arthur Boutelle, D.V.S. (McGill, '95), Newton Center, Mass.

P. H. Browning, M.D.C. (Chic. V. C., '05), San Jose, Cal.

Harry D. Chamberlain, V.S. (Ont. V. C., '87), Belvidere, Ill.

L. Champlain, D.V.S. (K. C. V. C., '05), Kansas City, Mo.

George J. Collins, D.V.S. (K. C. V. C., '06), West Point, Neb.

Robert E. Collins, V.S. (Ont. V. C., '93), Memphis, Tenn.

Clare V. Connell, V.S. (Ont. V. C., '94), Decatur, Ind.

Ernest Linwood Cornman, V.M.D. (U. P., '00), Marietta, Pa.

Carl Cozier, M.D.C. (Chic. V. C., '05), Bellingham, Wash.

C. Price Dixon, D.V.S. (Ohio V. C., '93), Charlottesville, Va.

James S. Donald, V.S. (Ont. V. C., '86), Bay City, Mich.

O. E. Dyson, M.D.C. (Chic. V. C., '91), Chicago, Ill.

Cyrus B. Estey, M.D.V., V.S. (Ont. V. C., '05; McK. V. C., '06), St. Cloud, Minn.

- William C. Ferguson, D.V.S. (A. V. C., '93), Paterson, N. J.
 C. H. Gaines, D.V.S. (K. C. V. C., '06), Chilhowee, Mo.
 Ward Giltner, D.V.M. (N. Y. S. V. C., '06), Auburn, Ala.
 S. W. Goss (Ohio S. U., '05), Manhattan, Kan.
 John W. Haffer, V.S., M.D.V. (Ont. V. C., '03; McK. V. C., '06), Paterson, N. J.
 Thomas W. Healey, M.D.C. (Chic. V. C., '06), San Jose, Cal.
 Thomas S. Heckman, D.V.S. (K. C. V. C., '05), Kansas City, Mo.
 E. A. Jenkins, M.D.V. (McK. V. C., '03), Shelbyville, Ill.
 Peter T. Keeley, V.S. (N. Y. V. C., '94), Waterbury, Conn.
 Charles Labash, D.V.S. (K. C. V. C., '07), Passaic, N. J.
 F. E. Lawton, V.S. (Ont. V. C., '93), Greencastle, Ind.
 Daniel B. Leininger, D.V.S. (K. C. V. C., '06), Kansas City, Mo.
 Willis B. Lincoln, D.V.M. (Iowa S.C., '93), Nashville, Tenn.
 O. E. Lindberg, M.D.V. (McK. V. C., '06), Washington, D. C.
 Geo. H. Locks, D.V.S. (U. C., '98), Lockeford, Cal.
 Stephen Lockett, V.M.D. (U. P., '06), Philadelphia, Penn.
 W. H. Luther, M.D.C. (Chic. V. C., '02), Booneville, Ind.
 Winfred B. Mack, D.V.M. (N.Y.S. V. C., '04), Reno, Nev.
 Daniel J. Mangan, D.V.S. (N. Y. A. V. C., '00), New York, City, N. Y.
 H. Marshall, D.V.S. (Ohio V. C., '93), Charlottesville, Va.
 H. W. McConnell, D.V.S. (K. C. V. C., '04), Kansas City, Mo.
 Geo. H. Miner, D.V.M. (N. Y. S. V. C., '03), Washington, D. C.
 David G. Moberly, D.V.S. (K. C. V. C., '00), Manilla, P. I.
 Harry P. Moss, D.V.M. (Cin.V.C., '05), Germantown, Ohio.
 H. H. Newcomb, D.V.S. (McGill, '07), Bridgeport, Conn.
 W. Oscar Ney, D.V.S. (K. C. V. C., '07), Thayer, Mo.
 O. W. Noyes, D.V.S. (K. C. V. C., '05), Norfolk, Neb.
 Jasper S. Potter, D.V.S. (Chic.V.C., '92), Iowa City, Iowa.
 Marcus J. Ragland, D.V.M. (Cin. V. C., '05), Monroe, N. C.
 Chester L. Roadhouse, D.V.M. (N. Y. S. V. C., '06), Berkeley, Cal.
 J. W. Robinson, (Harvard V., '98), Natick, Mass.
 Walter E. Sharp, V.M.D. (U. P., '04), Newton, Iowa.

Wm. Sheppard, M.R.C.V.S.L. (R. C. V. S., Eng.), Sheepshead Bay, Brooklyn, N. Y.

J. Harvey Slater, D.V.S. (K. C. V. C., '03), Richmond, Mo.

Clarence E. Smith, D.V.S. (K.C.V.C., '07), Newbern, N. C.

Henry S. Smith, V.S. (Ont. V. C., '89), Albion, Mich.

Robert P. Smith, D.V.S. (K. C. V. C., '07), Edison, Neb.

Rosslyn J. Stafford, D.V.M. (N. Y. S. V. C., '06), Washington, D. C.

E. F. Stewart, M.D.C. (Chic. V. C., '05), Beatrice, Neb.

William J. Stewart, D.V.S., M.D. (Nat. V. C., '94), Tullahoma, Tenn.

James W. Tade, Sr., D.V.S. (K. C. V. C., '03), Vincennes, Ind.

A. C. Tillman, M.D.V. (McK., '02), Earlville, Ill.

Wallace F. Vail, D.V.S. (N. Y. A., '05), Greenwich, Conn.

Henry J. Washburn, D.V.S. (Col. U., '98), Washington, D. C.

John H. Webster, D.V.S. (K. C. V. C., '06), San Francisco, Cal.

O. O. Wolf, M.D.C. (Chic. V. C., '06), Ottawa, Kan.

Morris Wooden, Ph.B., D.V.S. (Nat. V. C., '95), Washington, D. C.

F. H. Wright, D.V.M. (N.Y.S.V.C., '06), Brooklyn, N. Y.

Geo. D. Young, D.V.S. (K.C.V.C., '06), Washington, D. C.

E. H. Yunker, V.M.D. (U. P., '06), Philadelphia, Penn.

H. A. Alcorn, M.D.C. (Chic. V. C., '04), Adair, Iowa.

S. W. Allen, M.D.C. (Chic. V. C., '07), Watertown, S. D.

Elbert M. Bates, D.V.S. (K. C. V. C., '07), Coffeyville, Kan.

Wm. S. Bell, V.S. (Ont. V. C., '82), Cranbrook, B. C.

J. E. Blackwell, V.S. (Ont. V. C., '87), Hutchinson, Kan.

A. J. Munn, D.V.S. (K. C. V. C., '04), Fayette, Mo.

John William Bland, V.S. (Ont. V. C., '88), Vancouver City, B. C.

Edward A. Bundy, D.V.S. (K. C. V. C., '05), Reno, Nev.

Elvon S. Dickey, D.V.S. (K.C.V.C., '06), Sioux City, Iowa.

George A. Dodge, V.M.D. (U.P., '04), Northwood, Iowa.

Wilton Elery, D.V.S. (K. C. V. C., '06), Anita, Iowa.

Guy C. Furnish, D.V.S. (K. C. V. C., '04), Hiawatha, Kan.

H. J. Frederick, D.V.M. (Iowa S. C., '05), Logan, Utah.

W. H. Gaddes, V.S. (Ont. V. C., '92), Kelowna, B. C., Canada.

H. H. S. George, M.R.C.V.S.L. (R. C. V. S., London, Eng., '01), Kamloops, B. C.

W. M. Gordon, D.V.M. (Iowa S. C., '05), Sioux City, Iowa.
 William John Hartman, B.S.A., M.D.C. (Chic. V. C., '04),
 Bozeman, Mont.

James G. Hope, M.D.C., D.V.S. (Chic. V. C., '96), Fort
 Madison, Iowa.

Logan D. Huff, B.V.S. (K. C. V. C., '04), Spokane, Wash.

Frank Hunt, V.S. (Ont. V. C., '87), Jamestown, N. Y.

Jesse W. Joss, D.V.S. (K. C. V. C., '06), Hutchinson, Kan.

Edward D. Kennedy, D.V.S. (K.C.V.C., '06), Seattle, Wash.

A. D. Knowles, D.V.S. (K.C.V.C., '06), Livingston, Mont.

J. V. Lacroix, D.V.S. (K. C. V. C., '06), Hiawatha, Kan.

Walter J. Lacy, D.V.S. (K.C.V.C., '06), Parsons, Kan.

Carlos Ortes De Landozuris Rodas (Official V. C., Madrid,
 Spain, '71), Ponce, Porto Rico.

J. F. Mack, M.D.V. (McK. C., '06), River Falls, Wis.

B. W. Murphy, M.D.C. (Chic. V. C., '99), St. Joseph, Mo.

C. L. Norris, D.V.S. (K. C. V. C., '07), North Bend, Neb.

W. R. O'Neal, D.V.S. (K. C. V. C., '04), Wayne, Neb.

Fred. W. Porter, D.V.M. (Ohio S.V.C., '04), Tampa, Fla.

Frederick L. Schneider, B.S., D.V.S. (K. C. V. C., '05),
 Albuquerque, N. M.

Herbert Silverwood, M.D.C. (Chic. V. C., '07), Pendleton,
 Ore.

N. C. Spalding, Jr., D.V.S. (K. C. V. C., '07), Provo City,
 Utah.

J. G. Steele, D.V.S. (K. C. V. C., '06), Oklahoma, Okla.

D. S. Tambllyn, D.V.S. (McGill, '01), Midway, B. C.

R. A. Tucker, D.V.S. (K. C. V. C., '07), Lincoln, Neb.

A. W. Whitehouse, V.S. (Ont. V. C., '94), Laramie, Wyo.

N. J. Dunleavy, M.D.C. (Chic. V. C., '97), Denver, Colo.

Chas. R. McCoppin, D.V.S. (K. C. V. C., '06), Wilcox, Neb.

W. C. McPherson, D.V.S. (K.C.V.C., '04), New York City.

Thomas Jefferson Mahaffy, V.M.D. (U. P., '05), Jackson-
 ville, Fla.

John A. Meagher, D.V.M. (Ohio V. C., '95; Cin. V. C.,
 '05), Glendale, Ohio.

P. Juckniess, D.V.S. (K. C. V. C., '06), Omaha, Neb.

J. Ellis Jennings, D.V.S. (K. C. V. C., '07), Sheldon, Neb.

Frank Jelen, D.V.S. (K. C. V. C., '05), Omaha, Neb.

L. B. Philpott, D.V.S. (K. C. V. C., '07), Manti, Utah.

Lee B. Songer, D.V.S. (K.C.V.C., '03), Grand Island, Neb.

S. H. Stephens, D.V.M. (Cin. V. C., '04), Loveland, Ohio.

- W. B. Welch, D.V.M. (Iowa S. V. C., '83), Marshall, Mo.
 M. J. Woodliffe, M.D.C. (Chic. V. C., '03), Denver, Colo.
 John Scott, V.S. (Ont. V. C., '86), Peoria, Ill.
 O. L. Boor, V.S. (Ont. V. C., '90), Muncie, Ind.
 E. M. Bronson, M.D.C., V.S. (Chic. and Ind., '00-'01), Indianapolis, Ind.
 Benjamin F. Davis, D.V.S. (K. C. V. C., '07), Fort Scott, Kan.
 Edwin O. O'Dell, M.D.C. (Chic. V. C., '07), Centre City, Neb.
 R. F. Eagle, D.V.S. (K. C. V. C., '01), Kansas City, Mo.
 J. F. Hemphill, D.V.S. (K. C. V. C., '07), Clay Center, Kan.
 W. J. Hart, D.V.S. (K. C. V. C., '07), Wetmore, Kan.
 Oscar Silfver, M.D.C. (Chic. V. C., '06), Peoria, Ill.
 Burton R. Rogers, D.V.M. (Iowa S. C., '99), Manhattan, Kan.
 Herman R. Ryder, D.V.M. (N.Y.S.V.C., '97), Chicago, Ill.
 Chas. G. Schlomer, V.M.D. (U. P., '07), New York City.
 W. A. Scott, V.S., M.D.C. (Chic. V. C., '05), Columbus, Ga.
 C. S. Shore, V.M.D. (U. P., '01), Lake City, Minn.
 C. H. Stange, D.V.M. (Iowa S. C., '07), Ames, Iowa.

HONORARY MEMBER ELECTED.

Dr. I. I. Schmidt, of Kolding, Denmark, was elected an honorary member, in recognition of his great discovery in connection with the therapeutic treatment of parturient paresis of cows.

A CABLEGRAM FROM PROF. LIAUTARD.

Secretary Lyman read a cablegram as follows: "Paris, Sept. 10.—My souvenirs to the members of the greatest veterinary association in the world. Liautard." This brought forth thundering and prolonged applause, at the subsidence of which the Secretary was instructed by vote to return a cablegram of thanks and congratulations.

COMMITTEE ON INTELLIGENCE AND EDUCATION.

Chairman Leonard Pearson was unable to be present, but sent in through Dr. W. Horace Hoskins a valuable report on

veterinary colleges. This we were enabled to secure, and elsewhere in this number it will be found in full.

Dr. D. Arthur Hughes contributed to the committee's report a discussion of what the several States are doing for the furtherance of veterinary intelligence and education.

These reports, after discussion, were referred to the Association of Veterinary Faculties and Examining Boards.

COMMITTEE ON DISEASES.

Chairman V. A. Moore offered a short report as to the status of the Committee and the selection of subjects for their investigations. In the absence of definite instructions, the committee has merely to select a subject for each individual member to report upon, and it is often at a loss to know what is best. He suggested that annually the Executive Committee should instruct the committee upon its duties for the year. For this year he had selected for himself: "Some Principles of the Newer Pathology in Their Application to the Control of Diseases." This proved one of the gems of the Convention, bringing some thoughts to the advanced treatment of disease which are overlooked in the multiplicity of modern therapeutics. Fortunately, the author has promised a copy of this paper for its next issue.

Dr. L. A. Merillat, of Chicago, a member of this committee, presented an excellent section upon "The Disposal of Horses Affected With Occult Glanders." The subject was handled largely from the standpoint of the private practitioner and in the interest of owners, and, while he recommended immediate destruction of clinical cases, and isolation of typical reactors, he believed the large majority of animals which by test showed reaction where they had merely been exposed would recover and prove to be useful animals and valuable assets to their owners.

The subject of glanders was discussed at length by Dr. McGilvray, of Winnipeg, Manitoba, inspector in charge of the Diseases of Animals Branch of the Canadian Department of Agriculture. He showed that the methods in operation in Canada were very different from those advocated by Dr. Merillat; but it must be remembered that in these cases the subject is looked at from two different points of view—Government control and

the practitioner's duty to the state, the municipality, and to the owner.

THE PUBLICATION COMMITTEE.

Chairman C. J. Marshall rendered a comprehensive report of his stewardship. The "Proceedings" of the 1906 meeting had cost a total of \$1,329.50, including the stenographer and all other items. This made each copy of "Proceedings" cost \$1.56. Lucky is the Association to secure Dr. Marshall for another year.

THE SECRETARY'S REPORT.

Dr. Richard P. Lyman presented a carefully prepared report, studded with many pertinent suggestions for the good of the organization. It was as follows:

"Mr. President and Members:

"The scope and influence of this Association becomes annually more widespread; applications are to-day on file from States heretofore unrepresented. I would suggest that the Association recommend to the incoming executive additions to the list of Resident Secretaries, for it is by utilizing these marks of progress that the value of the Association is enhanced and the general practitioner and national organization are brought into closer relationship. It is possible at this time to add Resident Secretaries to the States of Georgia, Idaho, Utah, Wyoming, Oklahoma, New Mexico and to the province of New Brunswick.

"Reinstatement.—This Association has from time to time been compelled to disqualify from active membership privileges and erase from the roll many members owing to failure to remit their annual dues. It is encouraging to note that this list annually has a tendency to become less lengthy; especially during the past year has the membership remained practically intact, only eleven active members were for this cause suspended.

"For a number of years past it has been customary to reinstate applicants that have considered membership of sufficient value to pay their arrearages, and, indeed, in some instances, this sum has amounted to no small consideration undoubtedly consequent upon a desire of those in charge of the direction of the Association to save valuable members even though it has long since been specifically stated that those eighteen months

in arrears should be dropped. Because of a lack of accurate information bearing upon the exact indebtedness of each individual applying for reinstatement and moreover because such delinquent did virtually by a by-law adopted by this Association cease to be a member when two years in arrears I would recommend that this Association definitely prescribe that the sum of \$9.00 shall accompany all applications for reinstatement; that this sum shall pay for dues obligated prior to suspension and pay dues one year in advance as elsewhere specified for membership dues, and, further, that all those obtaining their active membership by process of reinstatement shall, before being duly qualified, again sign the Constitution and By-laws as provided for new members.

"Membership Data Book.—Members may recall the recommendation from the finance committee of 1906, considering the advisability of a revised ledger system; for this reason and further because of the congested condition of the ledger turned over by my predecessor it seemed advisable to open a new and revised book. Taking advantage of the opportunity and convinced that this Association was worthy of a membership data book suitable for complete membership reference, durable, clear and compact, your Secretary formulated a revised system which he laid before your worthy president and, meeting with his approval, inaugurated. This data book embodies all the names of past and present active and honorary members, a record of time of admission, resignation, suspension, reinstatement, attainment of honor roll privileges, expulsion or death; likewise a record of yearly dues, as well as a space reserved for special or specific historical data of the individual. The one hundred and fifty pages under one cover are so tabulated as to be suitable for years to come permitting an entry of 6,000 names. The book gives to date summary information of each individual as far as was found possible from 1863 and this in a manner that cannot but be found advantageous to committees or officers when called upon to investigate the record of the individual.

"Although the work of compiling these statistics was laborious and detailed, your Secretary has endeavored to make them as accurate as was possible with the records so cheerfully furnished by the Librarian, Dr. W. L. Williams, and by further individual aid from several long-time members. The volume is submitted to this body with the suggestion that if found worthy it be made the official membership record book and further that a suitable metal container be purchased for its preservation.

“Concerning Honor Roll.—It was while engaged in compiling the membership data book that your Secretary appreciated the wisdom of the recommendation made by Dr. W. H. Lowe in his presidential address, viz.: ‘That the honor roll be so construed as to more especially include the members for meritorious record, this either in his professional field or in relation to this Association.’ I am thoroughly convinced that as now provided the honor system is detrimental to the organization and capable of improvement. I would elaborate even further than suggested by Dr. Lowe and recommend that the By-laws pertaining to this provision be altered so that members of this Association that have distinguished themselves either by valued work in connection with this organization or in the field of veterinary science be eligible to honor roll privileges, also that members that have for twenty-five consecutive years been connected actively with this association shall be entitled thereto and further that the payment of annual dues but not assessments shall be optional with such members as may have attained honor roll privileges consequent upon the twenty-five years’ membership.

“Application for Honor Roll.—Since the honor system was inaugurated it has been customary for the Secretary to wait for the entitled recipient to make formal application. It is respectfully requested that this body definitely direct what shall be the procedure; shall this custom be continued, shall members that are entitled to such qualifications be notified to make application, or, again, shall your Secretary annually and unsolicited inform this Association who is eligible? This is not now provided for in the By-law creating the honor roll, and I would inform this body that the following gentlemen, although having attained the right, have not as yet been placed thereon: J. C. Myers, active 32 years; C. W. Crowley, 31 years; Benj. McInnis, 31 years; W. J. Coates, 30 years; D. J. Dixon, 26 years; R. H. Harrison, 26 years; F. H. Osgood, 26 years; F. W. McLellan, 25 years; L. H. Howard, 25 years, and W. A. Sherman, 25 years.

“Earlier Members and the Honor Roll.—It would seem worthy at this time to consider the status of some of the earlier members of this Association and by adequate motion make the honor roll provisions sufficiently retroactive that we may recognize the valued efforts of the individual in his zealous attempts to elevate his profession and enhance the interests of this, his Association.

"That this thought may properly come before this body for consideration, your Secretary asks the privilege to recommend that at this meeting certain of our earlier members, whose names are included herein, be placed upon the honor roll of this organization. It would seem but just that we consider the value of their efforts and although possibly in some instances the individual in our zeal may have been accorded honorary membership it certainly seems feasible to place him or them on record in such manner that the identity may not pass away with the individual but have lasting recognition on the records of this Association.

"Bearing out this thought, I would recommend that we place upon our honor system the name of A. Liautard, an organizer and active worker, a man that served this Association in many important capacities, including Secretary and President, during the thirty-seven years that he retained his active membership. Dr. Liautard resigned his membership but not his interests in 1900, after having attained the distinction of holding the longest record of activity in this organization.

"C. Burden, an organizer and active worker for thirty-six years, during which period he was honored with the trusts of Secretary and Treasurer, dying in active membership in 1901.

"O. H. Flagg, an organizer and most constant attendant for thirty-three years, dying an active member in 1896.

"I. Michener, an organizer, elected an honorary member seven years preceding his death in 1899.

"J. Penniman, an organizer and member for thirty-three years.

"J. H. Stickney, an organizer and the first President of the United States Veterinary Medical Association, dying in 1900, following thirty-six years of activity in the interests in the organization.

"E. F. Thayer, President from 1869 to 1871, an organizer and constant member until the time of his death in 1889.

"Robert Wood, an organizer and an active member for twenty-seven years, serving the Association as President from 1867 to 1869.

"R. J. Saunders, elected to this Association in 1871, and died after remaining in good standing for twenty-eight years.

"T. K. Very, who for twenty-six years following his election to membership in 1872 worked for the interests of the Association.

" J. D. Hopkins, Secretary from 1874 to 1877, and remained active twenty-five years subsequent to his admission in 1873.

" C. B. Michener became a member in 1874 and died in 1894. He served as Secretary from 1880 to 1888 and was honored by election to the office of President from 1889 to 1890.

" C. P. Lyman, twenty-nine years an active member and President from 1877 to 1879.

" W. Bryden became a member in 1876, elected President from 1881 to 1883, and died an active member in 1894.

" *Eligibility of Applicants.*—The present policy of censorship over American veterinary institutions is praiseworthy and will in all likelihood redound to higher matriculation and advanced veterinary training, nevertheless, it would seem advisable for this body to suggest some definite or specific requirement for eligibility of applicants to this Association. When a certain veterinary school or college falls into disrepute and this Association rules that its graduates shall be forbidden admission, are we to construe this ban as retroactive or shall it refer only to graduates subsequent to such action?

" Prior to this time this provision has been possible of either interpretation and consequently applications have been refused from candidates whose graduation antedates members of the Association in good standing from the same institution. Such ruling is ambiguous if not embarrassing and must be immediately adjusted.

" Along this line it is suggested that the Executive Committee be instructed to annually submit to the Secretary a list of all institutions whether then operative or not whose graduates shall be eligible to membership.

" Furthermore, it appears that Section 2, Article VI., which refers especially to eligibility of applicants for membership is so broad in its interpretation and liable to place our Resident Secretaries in an exceedingly embarrassing and unfavorable light. As worded, three years of six months each and four veterinary instructors constitutes eligibility. The fulfillment of this requirement may be advertised, recognized by a number soliciting an application and none the less, the institution falls far short of any of the principles and aims that this Association is now endeavoring to inculcate. I would earnestly recommend an entire readjustment of our admission requirements and a revision to a system that our veterinary institutions can find possible of but one interpretation.

“By-Laws.—It would seem to your Secretary that there are at least glaring errors in the By-laws of the Association. There is absolutely no adequate provision for filling vacancies among the officers, should such occur during the interim between the annual meetings; again, you will observe that no provision is made in Section 5 of Article XII. in relation to an alteration of the By-laws, specifying what shall constitute a vote.

“New Members.—During the past year this office has endeavored to increase the number of active members and thanks to the energy of many of the Resident Secretaries, in full appreciation of their opportunities, our work has been productive of such results that we are enabled to present to this meeting for your consideration the largest number of applications in the history of the Association, totaling considerably over the hundred mark.

“Painstaking research and aid cheerfully rendered by the several Resident Secretaries has exposed that there are to-day something over 3,800 eligible practitioners in this country that are not and never have been affiliated with the A. V. M. A. To those conversant with the advantages gained by membership, even though an individual, is forced to forego attending the annual conclave, it suggests that there is a flaw in our missionary system.

“This membership consideration is an all-important question and well worthy of your most detailed debate. The enormous task of securing names and addresses and corresponding with veterinarians throughout this continent precludes the possibility of detailing such work upon the Secretary whose duties are even now all too onerous. More properly, in the opinion of the Secretary, might this proposition be met by a membership committee, or the creation of a specific office, the incumbent of which to work in coalition with the Resident Secretaries.

“Annual Dues.—I cannot close my annual report without calling your attention to a few salient points in reference to the annual dues. Your Secretary has been somewhat disappointed in the delinquency of members in paying their annual obligations. Our yearly prospective income is abundantly sufficient to enable this organization to meet its entire indebtedness, but, on the other hand, it is a disgrace for an association of our magnitude to be so continuously hard up and, furthermore, it is unfair to harass and put the burden of forced pleading collections upon your officers. The members should bear in mind

that the transcript of the annual meeting cannot be accomplished without considerable outlay and can and should be paid for when the bill is presented, also the conduct of the committees and officers' affairs require consideration.

"It is a good sign to report that the delinquents subject to suspension during the past year reached the lowest figure, to my knowledge, in the history of the Association, none the less, the amount of outstanding presumably available funds exceeds the four figure mark. Kindly bear this in mind and when you are called upon to add your mite do not delay. Do your part towards keeping our credit unimpeachable and remember we deal with business people and desire to demonstrate that we are business men.

"*Railroads.*—In justice to myself I feel that a word relating to railroad rates is pertinent. Unquestionably, the members have noted my failure to secure the usual reduced rates. Negotiations have been practically continuous since my first correspondence December last, but, owing to the recent legislative enactments in several states it has been absolutely impossible to obtain concessions from any source. The railroads have all exhibited such beautiful unanimity of action that we encountered on all sides the same expressions and refusal to each and every of the several propositions submitted; certainly, in unity there is strength.

"I feel that your Secretary would be exceedingly lacking in courtesy should he fail to acknowledge his appreciation to those members and especially the Resident Secretaries that have so cheerfully co-operated in the work of the past year. Thanking the members for the many favors extended, I have the honor, Mr. President, to submit this, my annual report."

REPORT OF THE TREASURER.

Treasurer White had printed and distributed among the members his annual report, and it showed the most satisfactory condition of the finances of the Association ever presented in its history. Notwithstanding that the report for the year included the payments for printing two years' "Proceedings," amounting to \$2,150.53, there remained in the Treasurer's hands at the opening of the Kansas City meeting \$1,337.12, and he received during the meeting sufficient funds to swell the amount to more than \$2,000.

ELECTION OF OFFICERS.

The Nominating Committee (consisting of Ex-Presidents Robertson, Williams, Hoskins, Butler, Winchester, Stewart, Bell, and Lowe) submitted the following names:

For President—W. H. Dalrymple, Louisiana; Joseph Hughes, Illinois, and M. H. Reynolds, Minnesota. Before the vote was taken Dr. Hughes withdrew, and the ballot resulted in the election of Dr. Dalrymple by a handsome majority, which was, upon the motion of Dr. Reynolds, made unanimous.

For Vice-Presidents—R. A. Archibald, California; Thomas Bland, Connecticut; C. A. Cary, Alabama; A. S. Cooley, Ohio; Charles G. Lamb, Colorado; J. H. McNeil, Iowa; A. D. Melvin, District of Columbia; R. C. Moore, Missouri; Otto G. Noack, Pennsylvania; D. A. Piatt, Kentucky; Geo. H. Roberts, Indiana; and Thomas E. Smith, New Jersey. The balloting resulted in the election of Drs. Melvin, Moore, McNeil, Archibald and Cary.

For Secretary—Drs. H. Jensen, Nebraska, and R. P. Lyman, Connecticut. Dr. Jensen withdrew in favor of Dr. Lyman, and the President was instructed to cast the vote of the Association for the present incumbent.

For Treasurer—C. J. Marshall, Pennsylvania, and George R. White, Tennessee. Dr. Marshall withdrawing, the Secretary cast one vote of the Association for Treasurer White.

So that the officers for 1907-08 are as follows:

President—William H. Dalrymple, Louisiana.

Vice-President—A. D. Melvin, District of Columbia.

Vice-President—R. C. Moore, Missouri.

Vice-President—J. H. McNeil, Iowa.

Vice-President—R. A. Archibald, California.

Vice-President—C. A. Cary, Alabama.

Secretary—Richard P. Lyman, Connecticut.

Treasurer—George R. White, Tennessee.

PAPERS AND DISCUSSIONS.

The first paper presented was that of Prof. A. Liautard, entitled "John Smith and His Misfortunes,"* which was read by Secretary Lyman. It provoked considerable discussion, not a few dissenting from the argument of the author against the wisdom of examining candidates before State Boards. The general opinion seemed to be that, while such a result is highly

*Printed elsewhere in this number.

desirable, conditions in America do not warrant such a course at present. Among those taking part in the discussion were Drs. Fish, Noack, Hoskins, Melvin, and D. A. Hughes.

"The Place of Veterinary Medicine in State Education" was the subject of a well-prepared and thought-out paper by Dr. D. Arthur Hughes, Veterinary Inspector of the Subsistence Department of the United States Army. It was upon the same high plane of reasoning and conclusions as all the other contributions to the subject of education, notably those of Chairman Pearson, of the Intelligence and Education Committee; Liautard, Dr. Williams, before the Faculties, and President Law in his address.

Dr. P. A. Fish, of New York, gave some interesting impressions of his recent trip abroad in a paper entitled "Observations on Veterinary Education and Practice in Europe." The Doctor visited twelve of the chief veterinary schools in various countries, and his notes were instructive and interesting. We have secured his promise to furnish the REVIEW with a revised copy of his paper, and as he carried his camera with him, he will present a photo illustrating some scene in connection with each school described.

Dr. A. T. Kinsley, of Kansas City, presented at the evening session of the second day, with the aid of stereopticon views, the subject of "Tumors," which have been the object of long investigation by this earnest pathological worker. He made this usually dry theme very attractive to his auditors, many of whom were ladies.

"Municipal Meat Inspection in the South" was another of the topics of the evening session, and was contributed by Drs. C. A. Cary and Ward Giltner, of Alabama.

"Milk as Affected by Stable Practices and Subsequent Exposures," by Dr. M. H. Reynolds, of Minnesota, followed Dr. Cary's paper, and they were discussed together. This discussion was led by Dr. Joseph Hughes, who described in detail the methods of a Chicago dairyman who endeavors to produce a milk as free from contamination as it is possible to make it. Dr. Tait Butler followed, and made a plea for a better study of dairy conditions by the veterinarian, and claimed that if he wishes to take his place as an authority upon the subject he must himself become a dairyman. Dr. E. L. Quitman then put a couple of knotty questions to Drs. Reynolds and Cary, and gave some interesting experiences of his own. Both Drs. Cary and

Reynolds replied and contributed considerable interest to the discussion. The subject was closed by remarks by Dr. Hoskins, who was certain that to secure a pure milk supply necessitated the payment of larger prices to the producer. He noted that people will pay the highest prices for the best brands of whiskey, and yet they will seek the dealer selling such an important article of food as milk who will charge the lowest price.

"Stable Ventilation from a Clinical Standpoint" was the theme of Dr. G. A. Johnson, of Sioux City, Iowa, and was in the nature of a criticism of the bulletin issued some time ago by the Minnesota Experiment Station, which detailed the effects upon animals of close stabulation without any ventilation. It would seem that there was no common ground between these two gentlemen. Dr. Johnson fears the results of such teachings; that they will cause owners of animals to disregard the well-established principles and practices of ventilation; while Dr. Reynolds was merely giving the results of his experiments to show the effects of carbon dioxide upon the systems of confined animals. There can be no serious fault with a scientific truth being made known. In the discussion, Drs. Young, Connaway, Moore, Merillat, and Quitman took part.

Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, read a most important paper on "Future Work in the Eradication of Tuberculosis." This subject commanded the closest attention, for aside from the intrinsic value of the contribution, it was regarded as indicating the probable attitude of the Government concerning this important subject. The author has agreed to furnish the REVIEW with a copy for early publication.

Dr. John R. Mohler, Chief of the Pathological Division of the Bureau of Animal Industry, presented the subject of "Tuberculosis in Swine," and he treated it in a thoroughly scientific and practical manner, showing the extensive prevalence and rapid increase in the disease, and indicated how it could be checked and eradicated. He gave many instances showing how outbreaks were directly dependent upon the ingestion of tuberculous material—from the feces of tuberculous cattle, from hogs consuming carcasses of cattle dead of tuberculosis, from eating human tuberculous sputum, etc. In ascertaining the extent of outbreaks, the tuberculin test is apparently as available as in cattle, but there are some important differences in the method of employing it. It is recommended that the animal be crated before taking the temperature and that it be confined through-

out the process. More importance is attached to the average temperature succeeding the injection than to its height. Dr. Mohler has promised a copy of his paper for our readers.

Dr. W. L. Williams offered some further "Notes on the Surgical Relief of Roaring," he having some twenty-three cases to contribute to the account of his operations at the 1906 meeting. A few were failures, some were beneficial, but 77% were successful. The author critically considered his cases of failure, and thought he detected the cause in each instance, thus utilizing his experiences to perfect the method employed. Dr. L. A. Merillat took the floor and spoke upon the general subject of operations for roaring, concluding that Dr. Williams had perfected the most uniformly successful procedure yet known. As Williams had shown that tracheal stenosis is the most fruitful cause of failure, Merillat declared that tracheotomy is not necessary in this operation and should be dispensed with. The idea that quiescence of the arytenoid cartilage is thus secured is a mistake; that there is but slight motion in them save in the act of deglutition, when the epiglottis is forcibly applied to the glottis. Dr. Williams, however, showed that in certain instances the tracheal tube was the only thing that prevented death by dyspnoea. The general feeling was that with certain modifications suggested by experience, the operation gave every promise of proving the most uniformly successful of any method yet employed for the relief of roaring.

Dr. Richard Ebbitt, of Nebraska, read a communication entitled "My Experiences In and With the U. S. Bureau of Animal Industry," which was in the nature of a personal statement of grievances for non-appointment after having passed the Civil Service Commission. It appeared by his own history of his connection with the Bureau that he had once been dismissed for political reasons before the inauguration of civil service, and again after its establishment for the "good of the service." With these records on file, his name was simply not selected when submitted by the Commission, a right clearly belonging to the appointive powers. By vote of the Association, the Publication Committee was instructed not to publish the paper, as the forum of the A. V. M. A. is not the proper place to ventilate personal grievances.

THE HONOR ROLL.

The "Honor Roll," established three years ago, which is to include all members who have served twenty-five years in con-

secutive active membership, and who shall thereafter be exempt from the payment of dues, received a large increase at this meeting. Not only were the records searched by the Secretary for those who are now upon the list of active membership, but it was deemed by the Executive Committee that those who complied with the requirement at any period since the organization of the Association, whether living or dead, should also be included. Accordingly, the following names were added to the "Roll of Honor": L. H. Howard, R. H. Harrison, J. C. Meyers, C. W. Crowley, Benj. McInnis, W. J. Coates, D. J. Dixon, F. H. Osgood, F. W. McLellan, W. A. Sherman, A. Liautard, Chas. Burden, O. H. Flagg, I. Michener, J. Penniman, J. H. Stickney, E. F. Thayer, Robert Wood, R. J. Saunders, T. K. Very, J. D. Hopkins, C. B. Michener, C. P. Lyman, and W. Bryden.

REINSTATEMENTS.

By recommendation of the Executive Committee the Association reinstated the following to active membership:

C. C. Mills, D.V.S. (Chic. V. C., '90), Decatur, Ill.

W. H. McKinney, D.V.S. (Chic. V. C., '88).

Harry E. Bates, D.V.S. (A. V. C., '89), South Norwalk, Conn.

H. D. Clark, D.V.S. (McGill), Fitchburg, Mass.

Frank P. Dorian, D.V.S. (A. V. C., '93), Yonkers, N. Y.

R. A. Ramsey, D.V.S. (McGill, '92), Washington, D. C.

E. C. Schroeder M.D.C. (Harvard, '97), Bethesda, Md.

J. C. Whitney, V.S. (Ont. V. C., '82), Hillsdale, Mich.

RESOLUTIONS ADOPTED.

The following were submitted by the Committee on Resolutions and were unanimously adopted:

Eradication of Cattle Fever Ticks.

WHEREAS, The presence of the cattle fever tick (*Boöphilus annulatus*) is the greatest obstacle to the development of the cattle industry of thirteen States of this country.

WHEREAS, The work already done shows that the eradication of this disease-conveying parasite is feasible, and

WHEREAS, The appropriations made by the National Congress have during the past two years accomplished much and satisfactory progress has been made, therefore be it

Resolved, That it is the sense of this Association that the Federal appropriation for this work during the next fiscal year should be at least \$500,000, and we respectfully urge that the United States Secretary of Agriculture use his best efforts to secure such an appropriation from the next Congress.

Thanks to the Local Committee.

WHEREAS, The local committee has spared no efforts in making this forty-fourth annual meeting a success by attending to the many details in order to have as large a gathering as this properly cared for and placing every facility for their comfort at their command, therefore, be it

Resolved, That we in convention assembled extend our hearty thanks to each and every member of the local committee.

In Appreciation of the Pathological Exhibit.

Resolved, That the American Veterinary Medical Association tender an expression of its appreciation of the tireless and effective efforts of the Federal veterinary inspection at Kansas City to collect, hold in reservation, and exhibit to this convention a most excellent collection of the lesions of food-producing animals; and, to the Armour Packing Company for the freedom of its plant, the courtesy of its guides and for its many successful efforts for our entertainment a tender of thanks be extended.

Unprofessional Writers of Veterinary Bulletins.

WHEREAS, In a number of the States men not graduates of recognized veterinary colleges are at present writing bulletins on veterinary subjects and sending them out as State publications from the State experiment stations, therefore, be it

Resolved, That the proper officer of this association ask the Secretary of Agriculture what is his interpretation of the Hatch and Adams acts in this matter and whether it is, in his opinion, in conformity with the Federal Law.

INSTALLATION OF OFFICERS.

President L. then appointed Ex-Presidents Butler and Bell to conduct President-elect Dalrymple to the platform, where the gavel was delivered to him in a few words of praise for the incoming officer and of thanks by President Law for the support and encouragement extended to him during his term. Cries from all over the room for a speech from President Dalrymple were answered by a neat little address, which was pregnant

with optimistic sentiments for the future of the profession and Association.

After the installation of the five Vice-Presidents, Secretary and Treasurer, the President announced the appointment of two of his important committees, as follows:

Executive Committee—Wm. Herbert Lowe (chairman), M. H. Reynolds, Joseph Hughes, W. Horace Hoskins, J. G. Rutherford, and E. B. Ackerman.

Publication Committee—C. J. Marshall (chairman), E. M. Ranck, Thomas E. Smith, R. P. Lyman, and Tait Butler.

THE SURGICAL CLINIC

was held at the Kansas City Veterinary College, Friday, September 13, 1907, and a brief synopsis of the events is as follows:

Case 1.—Contraction of perforans and perforatus in metacarpal region. Bay horse, aged, 16 hands high, weight 1,200 lbs. Tenotomy, by Dr. J. S. Anderson, Seward, Neb.

Case 2.—Quittor involving the distal interphalangeal articulation of a hind foot. Roan gelding, aged, weight 1,200 lbs. Lateral cartilage removed and permanent dressing applied, by Dr. W. L. Williams, Ithaca, N. Y.

Case 3.—Cryptorchid, neither testicle descended and no trace found in either inguinal region. Bay horse, 15 hands high, weight 1,000 lbs. Castration, by Dr. J. W. Klotz, Mt. Vernon, Ind.

Case 4.—New growth on the penis. Phallotomy—amputation above the preputial ring, artificial urinary meatus made below ischial arch, general anaesthesia, by Drs. V. Schaeffer, Tekamah, Neb., and H. Jensen, Weeping Water, Neb.

Case 5.—Dental cyst—large new growth in anterior nares originating from first and second pre-molars. Bay gelding, 7 years old, 15¾ hands high, weight 1,150 lbs. Cyst removed and first and second pre-molars extracted, by Dr. L. A. Merillat, Chicago, Ill.

Case 6.—Purpura hæmorrhagica. Intravenous injection by Dr. L. C. Tiffany, Springfield, Ill.

Case 7.—Lameness, a slight exostosis on the distal end of the left anterior os corona. Bay mare, 6 years old, 16½ hands high. Median neurectomy, by Dr. J. H. Blattenberg, Lima, O.

Case 8.—Knee sprung. Total inability to extend to supporting position. Flexor metacarpi externus and internus divided above point where these tendons blend, by Dr. L. A. Merillat, Chicago, Ill.

Case 9.—Roaring. Bay gelding, 15½ hands high, weight 1,050 lbs. Excision of the vocal cords and ventricles of the larynx, by Dr. W. L. Williams, Ithaca, N. Y.

Case 10.—Yearling heifers. Oöphorectomy, by Drs. P. H. Browning, San Jose, Cal.; Geo. R. White, Nashville, Tenn.; C. O. Netherton, Gallatin, Mo.

Case 11.—Calf, two weeks old. Bovovaccination, by Drs. H. McConnell and W. C. McPherson, New York, N. Y.

Case 12.—Abscess in fatty cushion of the foot from nail puncture through the frog; swelling in concavity above heel. Bay gelding, aged, 16 hands high, weight 1,300 lbs. Horn and part of fatty cushion removed, pus liberated and seaton passed beneath the perforans tendon and dressed antiseptically, by Dr. L. A. Merillat, Chicago, Ill.

Case 13.—Long ears, bitch. Cropping, by Dr. C. E. Steele, St. Joseph, Mo.

Case 14.—Abscess and new growth in frontal and nasal sinuses. Discharges from nostrils, bones over sinuses bulging. Bay gelding, 16½ hands high, weight 1,300 lbs. Trephined and cavities cleansed, by Dr. J. S. Anderson, Seward, Neb.

Case 15.—Canker of left front foot. Part of the sole destroyed and purulent discharge from denuded surface. Chestnut stallion, 16 hands high, weight 1,400 lbs. All diseased tissue removed, dressed with bichloride of mercury and instructions given to re-dress three days later with tar bandage, by Dr. P. Simonson, Fremont, Neb.

Case 16.—Bog spavin—hock recently injured in runaway--synovitis. Saphena major ligated, by Dr. P. Simonson, Fremont, Neb.

Case 17.—Springhalt. Discussion of cause, thought to be due in most cases to adhesion of spermatic cord in case of geldings. Operation, dividing cord above point of adhesion, by Dr. T. Bent Cotton, of Columbus, Ohio.

* * *

NOTES OF THE A. V. M. A. MEETING.

It was good to have been at Kansas City.

In augmentation of the membership roll, Kansas City stands first, with hardly a second.

The South shows up strongly in the newly-elected officers of the Association. Out of the eight elective offices, that section se-

cured three—Dalrymple, of Louisiana, President; Cary, of Alabama, Vice-President, and White, of Tennessee, Treasurer.

The Army was fairly well represented at the meeting. Besides Dr. L. E. Willyoung, the official representative of the Army, there were present Dr. Alexander Plummer, Charles H. Jewell, John Osterhaus and S. L. Hunter.

The death of Dr. Ramacciotti was a great shock to the meeting. While preparing to leave Omaha for the convention, he was stricken with cerebral apoplexy and died without regaining consciousness. A floral wreath was placed upon his bier in the name of the association.

The Secretary has prepared what he terms a "Date Book," in which the record of every member of the Association from his election to date is given in a single line. It has room for 6,000 names, and is in condensed and simplified form. The Association adopted it as its official record book.

Parke, Davis & Co. were especially courteous to the visitors. Not only was their corps of clerks at the command of the Association for any service, their doors open with a welcome at all times, but on Friday night every visitor remaining in the city received a personal invitation to attend the Orpheum Theatre as their guests.

The Kansas City Veterinary College was a revelation to the visiting veterinarians. It was unsuspected that a comparatively young private school in the West should in equipment be at the very head of veterinary schools in this country, whether private institutions or endowed State colleges. The new \$25,000 building, with its large stock-judging amphitheatre, has greatly added to its facilities.

The Association very readily acquiesced in a recommendation of the Executive Committee that the Secretary receive an additional one hundred dollars to cover actual hotel and traveling expenses, incurred in attending meetings of the Association. Since the present salary of the Secretary was established, the duties have multiplied two-fold, and the present incumbent is meeting them in a very satisfactory manner.

A recommendation was received from the Executive Committee that the President appoint a Corresponding Secretary "whose duty it shall be to make and maintain a list of the veterinarians of America eligible to membership in this Association, and to endeavor to secure applications for membership in

this body therefrom." As a change of by-laws is involved, the recommendation was laid over until the next meeting.

It is now definitely settled that the name of Hoskins will be perpetuated in American veterinary medicine, not only by the glorious life and work of W. Horace, but by the entrance into its ranks of his eldest son, Preston, who will enter the University of Pennsylvania this fall to begin his veterinary education. Molded in the image of his illustrious sire in feature and physique, he bids fair to take up the work of his father when the latter comes to seek a well-deserved rest.

Side trips were the rule with delegates to the meeting. Quite a large number went on to Denver, among whom were Dr. James T. Glennon and mother, Newark, N. J.; Drs. J. Payne Lowe, Passaic, N. J., and Thomas E. Smith, Jersey City, N. J.; Drs. S. Brenton, of Detroit, and George W. Dunphy, of Quincy, Mich., continued on to Colorado to inspect a gold mine in which they have invested some money and from which they anticipate withdrawing considerably more than they put in.

In the attendance at Kansas City, the following States and countries were represented: Alabama, Arkansas, California, Canada, Colorado, Connecticut, Cuba, District of Columbia, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah and Wisconsin.

By decision of the Association, Resident State Secretaries will hereafter report to the Committee on Intelligence and Education, giving a statement of recent veterinary facts and prevalent diseases within their jurisdiction, shall aid the President and Secretary by the performance of such other duties as they may direct. This will undoubtedly materially assist the Committee to a better grasp of the veterinary situation throughout the country, and the intelligence will be placed before the Association in a more condensed and systematic manner.

The California delegation, consisting of Drs. H. A. Spencer, R. A. Archibald, P. H. Browning, and D. F. Fox—strong pillars of the veterinary profession of the Pacific Slope—continued their trip to the Atlantic seaboard, taking in Saratoga *en route*. In New York, the editor of the REVIEW had the pleasure of a short call from them; but as they were bent upon seeing as much

as possible in a very short space of time, they were necessarily on the jump. Dr. Spencer is regarded as the father of the veterinary profession of California, but in energy in obeying the calls of his profession, he is also its son. He was taken to the Pacific Coast when a child, and had never gotten east of the Sierras until the present trip. They all expressed the greatest delight with the Kansas City meeting, and thought that another year would find them again in attendance.

A number of those in attendance upon the A. V. M. A. meeting went on to Richmond, Va., to the annual meeting of the Inter-State Association of Live Stock Sanitary Boards, which convened in that city on the 16th, lasting over the 17th. Among those whom we saw before their departure were Drs. Whitcomb and Cotton, of Minnesota; Charles G. Lamb, of Colorado; D. A. Melvin, Chief of the B. A. I., Washington, D. C.; Tait Butler, of North Carolina; Allen, of Oklahoma; Dean of the Quarantine Department, B. A. I., Kansas City; G. Allen Jarman, of Maryland; D. F. Luckey, of Missouri, and J. H. McNeil, of Iowa. Besides these we observed upon the program the names of Drs. Leonard Pearson, of Pennsylvania; F. T. Eisenman, of Kentucky; J. M. Wright, Illinois; O. E. Dyson, Chicago, Ill.; Austin Peters, Massachusetts, and Dr. Ferneyhough, of Virginia.

Any number of invitations were read for the meeting of 1908. Many were purely commercial, from boards of trade and promotion clubs. Of course, an invitation cannot be entertained unless it is backed by responsible members of the profession, since a competent local committee must be on hand to prepare for such a large organization as the A. V. M. A. has grown. There were four of such invitations—Philadelphia, Pa.; Lexington, Ky.; Chicago, Ill., and Toronto, Can. In making a decision the executive committee will do well to consider the accessibility of all the candidates, and to bear in mind the democratic doctrine of "the greatest good to the largest number." The Eastern members thought they were going a long distance to Kansas City, but when those from the Pacific Coast and the Northwest were forced to travel 500 miles further, they will be willing to acknowledge that the Middle-West is the legitimate location for the meeting of a national association.

The banquet at the Coates House on Thursday evening was the largest ever held by the A. V. M. A. There were some 75 ladies among the diners and probably 150 gentlemen. The

menu was excellent, and inspiring music gave zest to the occasion. Dr. L. A. Merillat was the toast-master, and responses were given in happy vein by the following: "Veterinary Progress," Dr. E. L. Quitman; "The Central West," Dr. Chas. G. Lamb; "The Annual Pilgrimage," Dr. S. Brenton; "The Ladies," Dr. Tait Butler; "The New Story," Dr. O. L. Boor; "The Presidency of the A. V. M. A.," Dr. James Law; "Our New Members," Dr. W. Horace Hoskins; "The Bureau of Animal Industry," Dr. A. D. Melvin. Besides these stated subjects, *impromptu* remarks were made by Dr. R. A. Archibald, of California; Dr. S. Stewart, of the Local Committee; Dr. Osterhaus, U. S. Army; Dr. W. Herbert Lowe, of New Jersey; the story of the "Setting Hen," by Dr. A. T. Peters, of Nebraska, while the enjoyable evening was brought to a close by some good stories and wise words from President W. H. Dalrymple.

Ladies who accompanied husbands and fathers to Kansas City were decidedly in luck, for every hour of their time had been anticipated by the local committee. On the first day they attended the opening exercises of the convention, and afterwards went carriage riding to points of interest, while in the evening there was a reception to all visitors in the New Casino. On the second day, the ladies toured the shopping districts in the morning, in the afternoon went trolleying. For the evening, the ladies, in large numbers, attended a session of the convention, where the subjects presented were of especial interest to them. On the third day, the ladies joined with the members and visitors in a visit to the Armour Packing Company's extensive establishment, and viewed the interesting processes of preparing and inspecting meat and meat products. They also had the opportunity to inspect the largest collection of pathological specimens ever collected into a single exhibit in this country, if not in the world. The REVIEW hopes to present a catalogue of this grand collection in its next issue. In the afternoon, the ladies enjoyed a theatre party, and in the evening attended the annual association banquet. On the morning of the fourth day they participated in a splendid tally-ho ride through the boulevards and parks, fetching up at the Kansas City Veterinary College, where, with the gentlemen in attendance upon the clinic, a unique and delicious luncheon was served. From there the ladies repaired to the tallest building in the city, where a bird's-eye view of Kansas City was enjoyed. In the evening, through the cour-

tesy of Parke, Davis & Co., all who could, attended a theatre party at the Orpheum. Not content with filling in every official hour of the convention, the local committee pressed all who could to remain and participate in a trolley ride to Fort Leavenworth, Kansas, on Saturday.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of this association was held at the Board of Trade Rooms, Harrisburg, on September 3, 1907, and was called to order by the president, Dr. C. J. Marshall, at 10:30 A. M.

The roll call was dispensed with and the attendance was ascertained by registry.

The minutes of the previous meeting were read. The Secretary was advised to insert the report of the Board of Trustees in detail, after which the minutes were approved as read.

The president read a well-prepared address enumerating the strides made in our profession, accomplished the past year by united efforts of the fellow members, and furthermore mentioned different phases of the profession upon which improvements may be easily made.

It was moved and seconded that the Board of Trustees act upon the applications for membership until this work was accomplished. There was a recess of fifteen minutes for the collection of dues; also at this time the president ordered the Secretary to hand slips of paper around to the audience, requesting members to write professional questions thereon upon which they would like to have definite information. This proposition was well received and opened a wide discussion on many interesting cases.

Glanders was taken up by Dr. Jobson, followed by remarks from Drs. Marshall, Porter and others.

Dr. Porter was called upon to answer the cause of a stumbling horse. Various opinions had been offered by different members, when finally Dr. Adams ventured the fact that most cases of stumblers can be alleviated by proper shoeing, *i. e.*, shortening the toe and using a light shoe.

Dr. Wilson suggested the question, "Why not legislate the castrators?" which would allow only the most competent men to

operate and thus afford more work in that line for the qualified practitioner. Discussions followed by Drs. Jobson, Marshall, Bradley and others.

Dr. Pearson, the chairman of the Board of Trustees, read the following report:

"These applications for membership are favorably reported: Drs. Stephen Locket, W. L. Herbert, Geo. W. Greenfield, W. A. Meiser, Dan. R. Gordon, Wm. Henry Paxson, Harry Bender, R. L. Kann, A. Henry Speck, R. C. Gross, J. A. Hass, Chas. M. Hench, Carl W. Gay, Dan Rider.

"*Resolved*, That the suggestion of the president in behalf of increasing the registration fee from one to five dollars be made a subject for special consideration at the next meeting.

"*Resolved*, That the next annual meeting cover three days, the time to be apportioned as follows: First morning, clinics; first afternoon, business meeting; first evening, business; second morning, committee reports; second afternoon, papers; second evening, social; third morning, practical demonstrations and special conferences."

The question of changing the days of session was thoroughly discussed, when Dr. Hoskins moved that the secretary take a post card vote by mailing one to each member for his opinion, and if the majority seem in favor of a three days' session, have it, and if a majority be in favor of a two days' session, the old custom will prevail. This motion not being seconded immediately, a motion was made and seconded that a standing vote be had, but this fell through, as it proved to be against the by-laws.

Dr. McNeil moved the question be laid on the table, when another member suggested the question be again taken up at the noon session, when finally Dr. Hoskins' motion was taken consideration of and seconded by Dr. Collins.

In reference to extending an invitation to the American Veterinary Medical Association by this association to hold their meeting in Philadelphia in 1908, many of the members thought it was not the proper time to consider such a project at this time, but Dr. Hoskins insisted that the time was opportune, as it is the year of our silver anniversary and that the A. M. V. A. has not been in Philadelphia in thirteen years.

Dr. Hoskins therefore moved that this association invite the A. V. M. A. to Philadelphia in 1908, seconded by Dr. McNeil. There being some prejudice against the motion, a standing vote

was also taken, and it was finally agreed that the invitation be extended, as the majority proved in favor of such action.

New members were now introduced and some cheerfully responded.

The following delegates responded:

Keystone Veterinary Medical Association.—Dr. Ridge reported progress.

Schuylkill Valley Veterinary Medical Association.—Dr. Huyett reported good meetings with increasing membership.

Western Pennsylvania Veterinary Medical Association.—Dr. McNeil reported some progress.

York County Veterinary Medical Association.—Dr. Herbert reported good meetings. This organization is in its infancy and has quarterly meetings.

Dr. Ridge, of the Committee on Legislation, reported that nothing was left unaccomplished and that the Legislature approved of everything forwarded for their consideration and deliberation.

Adjourned to convene at 1:30 P. M.

"Questions from the "Question Box" were now again under consideration. The value of crude oil, especially Beaumont oil, a dark, heavy liquid with sweetish taste, was recommended for coughs. Dr. Weir spoke of the use of Pennsylvania crude oil for emphysema; also highly recommends same for treatment of sluggish wounds.

The best method for correcting wry tail was next considered. This condition is more difficult to cure than a crooked tail. A number of members gave their experiences with such cases and hence the operation was explained in detail.

"To what is shaking of the head due?" Dr. Bradley would attribute it to some nervous cause. Dr. Hoskins said that shaking of the head up and down was usually due to some affection of the head, while side shaking is in nine out of ten cases due to some intestinal derangement. Some members ventured that it is sometimes produced by small fistulous tracts in the ear, which cause a tickling sensation. Dr. Hoskins, resuming the floor, said if you correct the intestinal disorder your horse will cease shaking in the majority of cases; again, you'll find the stools of such horses are always loose when driving and mixed with whole feed, at the same time passing gas frequently; besides you may have these conditions (shaking of the head) of a purely reflex nature. Dr. Jobson compared these conditions to similar cases

in men. Dr. Moriarity reported a case of a shaky horse affected for five years; he attributed it to a nervous condition and said the case is still uncured. Dr. Noack thought the check rein is the cause of about 50 per cent. of cases, while the bit is the cause of 25 per cent. of cases. Dr. Bradley thought it merely a habit in many instances.

Dr. Geo. B. Jobson had for his subject, "The New Meat Inspection Law with Special Reference to the Conditions Found in Visiting the Slaughter Houses in the State."

Dr. Noack opened the discussion upon this paper. He said some of the small country shops were found to be very filthy and in an unsanitary condition, although he admitted that the City of Brotherly Love was equal to or worse than any place he had come in contact with. However, the Hebrew shops make him the most trouble. Improvements of places have begun in many instances already since his visit of inspection.

Dr. Pearson said the Federal Government expends about \$3,000,000 annually upon meat inspection, while the government of this State expends about \$250,000 annually, or about one-twelfth of what the Federal Government expends. He furthermore said that Pennsylvania was fortunate in being the first State in the Union to have an interstate meat inspection. He congratulated the governor upon the excellent choice of the three inspectors appointed and trusted the remaining seven appointments to be made yet may be capable men, so that the work started may be accomplished.

"The Relation of Antitoxines and Toxines to Infectious Diseases," by Drs. S. H. Gilliland and E. L. Cornman. The former read the paper, and the manner in which it was accomplished was plain evidence that he was master of his subject.

Dr. Adams opened the discussion by referring to rabies.

Dr. Gilliland, in connection with a reply to a question of rabies put to him, said that glycerine was the only antiseptic that would not destroy the virulence of the germ-producing rabies; that is to say, that the cord or brain may safely be placed in glycerine for future use, or for shipment to any laboratory.

Dr. Harger said the saliva of a rabid dog is frequently virulent for four or five days before any clinical symptoms are in evidence of the disease.

"The New Stallion Law," was the subject of Dr. Carl W. Gay. He explained the bill in detail and drew out the importance of such a measure to the satisfaction of all present. It appeared

to be the consensus of opinion that it was only proper to have all stallions registered.

Dr. Wilson suggested that he would consider it better to have a lien on the mare and foal, when finally Dr. Pearson thought it advisable to consider Dr. Wilson's suggestion at the next meeting.

A motion was made by Dr. Pearson, seconded by Dr. Newcomer, that the Secretary notify the governor of the worthiness of a man like Dr. Hoskins and urge him to reappoint Dr. Hoskins as a member of the State Examining Board.

"The Work of the State Examining Board," was the subject of Dr. Hoskins. This is always an interesting talk to the veterinarians. They highly appreciate the work done by this board, and find that such work is constantly extended into new and larger grounds.

Dr. Harger was now called upon to read his paper on "Glanders."* Dr. Harger had lots of experience with this disease and hence he brought out every phase of it.

Dr. Jno. Reichel opened the discussion. He referred principally to the agglutination test, but as it was close to train time for many of the Eastern practitioners, the audience was getting restless and the president accepted a motion to adjourn at 6 P. M.

A motion was made by Dr. Pearson, seconded by Dr. Schneider, that this Association appropriate \$50 for the expense of duplicating the books of the State Examining Board.

The following members were present: Drs. W. Horace Hoskins, Philadelphia; M. J. Collins, Myerstown; A. R. May, Boiling Springs; Leonard Pearson and S. J. Harger, Philadelphia; E. C. Porter, New Castle; T. E. Minice, Washington; A. H. Metzger, Millersville; E. W. Newcomer, Lancaster; W. G. Huyett, Wernersville; W. Moriarity, Gettysburg; W. H. Paxson, Lahaska; I. C. Newhard, Ashland; Jno. Reichel, Philadelphia; Wm. W. Wilson, Hartstown; J. R. Keller, Harleysville; A. W. Weir, Greenville; H. E. Bender, Lititz; S. E. Weber, Lancaster; J. N. Becker, Palmyra; G. W. Dunlap, New Holland; Jno. L. Bradley, Mercersburg; I. W. Zellers, Harrisburg; J. C. McNeil, Pittsburg; F. F. Hoffman, Brookville; Geo. B. Jobson, Franklin; A. O. Cawley, Milton; W. H. Frey, Pine Grove Mills; R. L. Kann, Mechanicsburg; F. W. Fernsler, Lebanon; J. W. Sallade, Auburn; J. H. Olweiler, Elizabethtown; G. W. Greenfield, Butler; Enoch Barnett, Philadelphia; J. W. Berwick; Jno. M. Eschelman,

* Will be published in an early number of the REVIEW.

Parkersburg; D. R. Kohler, Boyertown; J. B. Irons, Erie; A. R. Posteiger, Selins Grove; J. H. Oyler, Harrisburg; W. G. Herbert, York; Otto G. Noack, Reading; F. H. Schneider and Jno. W. Adams, Philadelphia; Daniel Ryder, Chambersburg; A. H. Speck, Fredericksburg; W. H. Ridge, Trevoise; R. C. Gross, Elizabethtown; Carl W. Gay; S. H. Gilliland, Marietta.

Visitors—Drs. A. T. Sellers, Camden, N. J.; Henry J. Sypher.

W. G. HUYETT, M. D. V., *Secretary*.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular meeting of this association was held in Donaldson's Hall, Broad and Filbert Streets, on Monday evening, September 10th, the president, Dr. B. M. Underhill, occupying the chair. The following members responded to roll call: Drs. Underhill, Lintz, James T. McAnulty, Reichel, Vansant, and visitors, Drs. Lockett and Kelly. The attendance was rather small, as quite a number of the "regulars" had gone to Kansas City.

The minutes of the June meeting were read and approved.

A communication was read from the American Breeders' Association, of which the Keystone Veterinary Association is a member, desiring the vote of the association upon the question of raising the dues from one dollar to two dollars per annum. The association as a member voted in favor of the increase.

Dr. Reichel reported an outbreak of rabies near Honeybrook, Pa. He examined the brains of several cows and in all the diagnosis was verified by finding the Negri bodies. Considerable discussion followed upon the subject of rabies. Dr. Vansant reported a case of rabies in a six-weeks-old puppy, which diagnosis was confirmed at the Pepper Laboratory.

The meeting adjourned at 11 P. M., to meet again on Tuesday, October 8th.

A. W. ORMISTON, *Secretary*.

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting was held in New Britain, Tuesday, August 6, 1907. The clinic was held at Dr. Geo. T. Crowley's Hospital, Nos. 26 to 30 Elm street. There were pres-

ent: Drs. J. H. Kelley, R. D. Martin, F. F. Bushnell, B. K. Dow, H. Whitney, Thos. Bland, G. W. Loveland, Geo. T. Crowley, P. T. Keeley, L. B. Judson, R. S. Todd, V. M. Knapp, Geo. T. Elliott, Chas. Beere, E. H. Morris, W. H. Pullen, Chas. L. Colton, A. T. Gilyard, A. C. Knapp, R. P. Lyman, H. C. Balzer, G. T. McGuire, E. C. Ross, P. F. Finnigan, F. A. Ingram, H. E. Bates, J. E. Underhill, G. V. Towne, C. R. Witte, H. W. Carley-Baker, B. D. Pierce, Prof. W. L. Williams; also several laymen visitors.

The operations began at 11 o'clock, continuing up to 2.15 p. m., when we adjourned to the Hotel Beloin for dinner. After dinner, President Kelley called the meeting to order, when it was voted to adjourn to the Hospital, where a large amount of clinical material was on hand, and proceed with the operations which continued in the evening until 9.30 o'clock. The following is a list of cases furnished through the kindness of Dr. Crowley:

Case No. I.—Bay gelding, navicular lameness; local anæsthesia with cocaine; operation, plantar neurectomy. Surgeon, Dr. Thos. Bland, assisted by Dr. Chas. Beere.

Case No. II.—Chestnut gelding, roarer; anæsthesia by chloral hydrate injected into the peritoneum by Dr. R. P. Lyman. Surgeon, Prof. W. L. Williams.

Case No. III.—Gray mare, foot lameness; local anæsthesia with cocaine; operation, median neurectomy. Surgeon, Dr. Thos. Bland, assisted by Dr. Chas. Beere.

Case No. IV.—Chestnut gelding, navicular lameness; local anæsthesia with cocaine; operation, plantar neurectomy. Surgeon, Dr. Thos. Bland, assisted by Dr. Chas. Beere.

Case No. V.—Bay mare, fistulous withers. Case inoperable.

Case No. VI.—Roan gelding, lame off-hind leg; diagnosis by Prof. W. L. Williams, paralysis of the obturator nerve.

Case No. VII.—Bay gelding, cartilaginous quittor inside left forward foot; operation, resection of lateral cartilage; anæsthetized with chloroform by Dr. R. D. Martin. Surgeon, Prof. W. L. Williams.

Case No. VIII.—Gray gelding, spavin lameness; local anæsthesia with cocaine; operation tibial neurectomy. Surgeon, Dr. H. Whitney.

Case No. IX.—Bay mare, pulmonary emphysema; diagnosis by Dr. Thos. Bland.

Case No. X.—Bay colt, enlargement over upper third molar tooth. Surgeon, Dr. Thos. Bland, assisted by Dr. H. Whitney.

Case No. XI.—Gray mare, spavin lameness; operation, resection of tendon of flexor metatarsi. Surgeon, Dr. Thos. Bland.

Case No. XII.—Bay mare, cartilaginous quittor outside off forward foot; operation, resection of lateral cartilage; anæsthetized with chloroform by Dr. Chas. Beere. Surgeon, Prof. W. L. Williams.

Case No. XIII.—Ovariectomy of bitch. Surgeon, Dr. R. P. Lyman.

Case No. XIV.—Trimming ears, Boston terrier dog. Surgeon, Dr. R. P. Lyman.

Case No. XV.—Operation on cat. Surgeon, Dr. R. P. Lyman.

Case No. XVI.—Pug dog, 9 years old; diagnosis fibroid tumor right side of neck. Drs. Bland and Whitney.

Case No. XVII.—Bay gelding, canker off-hind and near forward foot. Advice by Prof. W. L. Williams.

Case No. XVIII.—Bay gelding, neglected nail prick left hind foot. Surgeon, Dr. H. Whitney.

The annual meeting will be held in Hartford the first Tuesday in February, 1908.

B. K. Dow, *Secretary.*

THE Southern agricultural press is highly elated over the election of Dr. W. H. Dalrymple to the Presidency of the A. V. M. A. *The Louisiana Planter and Sugar Manufacturer*, in its issue of Sept. 14, in the course of an editorial on the subject, says: "Dr. Dalrymple, who has been a resident of Louisiana for nearly two decades, is known personally to most of the farmers and planters of this State. His long service as professor of veterinary science in the Louisiana State University, his veterinary services as veterinarian to the Louisiana State Experiment Stations, his long service as Secretary of the Louisiana State Agricultural Society, and splendid and laborious work at hundreds of Farmers' Institutes and district and parish fairs, are familiar to us all, and his name has become a household word among the tillers of the soil in Louisiana. That Dr. Dalrymple's ability as an investigator, as a teacher, and as a practitioner of veterinary science, should now receive national recognition, is recognition justly earned, and every friend of the Doctor in this state will join with us in tendering him our congratulations."

NEWS AND ITEMS.

DR. J. F. MOREL, Chicago V. C., '07, sailed for Belgium on Aug. 11 to visit his parents.

DR. W. F. HOEHNER, of Belleville, Ill., has been appointed an Assistant State Veterinarian.

DR. CARL H. YODER, Watseka, Ill., was married Aug. 21 to Miss Ethel Hackett, of the same city.

DR. J. W. REEDER has been appointed milk and dairy inspector of Sandusky, Ohio, at \$1,200 per year.

DRS. HAROLD M. ALVERSON and S. W. Allen have been appointed Deputy State Veterinarians of South Dakota.

DR. A. T. PETERS, of Nebraska, has been spending considerable time in the South Omaha stock yards studying tuberculosis in cattle and swine.

DR. S. S. SNYDER, Cedarburg, Wis., has accepted temporary appointment as Veterinary Inspector of the B. A. I., and will be stationed at Peoria, Ill.

DRS. S. B. NELSON, C. H. Shultz and Oscar Hartnagle have been appointed on the newly created Board of Veterinary Examiners of the State of Washington.

DR. LOUIS A. KLEIN, recently of Clemson College, S. C., has been appointed Assistant State Veterinarian of Pennsylvania, an office created by recent act of the Legislature of that state.

DR. M. S. WHITCOMB has been appointed State Veterinarian of Minnesota, in place of Dr. H. S. Ward, who has removed to Canada. His headquarters are at the Old Capitol Building, St. Paul.

DR. W. L. BAKER, of Buffalo, was elected President of the New York State V. M. S., at the recent meeting, and Dr. Clarence E. Shaw, Vice-President. Dr. A. Hamilton, of Delhi, is the new Secretary-Treasurer.

DR. AND MRS. E. L. QUITMAN, of Chicago, were in a runaway accident at Lake Geneva, Wis., recently, and, although badly bruised and shocked, they escaped without serious injury, though Mrs. Q. was confined to her room for several weeks. Their robust appearance at the Kansas City meeting did not indicate that they were any the worse for their thrilling experience.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Jan. 9, 1908.....	Trenton.....	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	1st Tu. Feb.....	Hartford.....	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	Sept., 1908.....	Utica.....	B. K. Dow, Williamantic.
New York S. V. M. Soc'y.....	Dec. 18, 1907.....	Reading.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	Monthly.....	Paterson, N. J.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call Exec. Com.	Boston.....	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Monthly.....	Boston.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	Monthly.....	Boston.....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	Feb. 4-5, 1908.....	Ottawa.....	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	April, 1908.....	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	141 W. 54th St.	141 W. 54th St.	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	Not stated.....	Decatur.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	July 2-3, 1908.....	Winnipeg.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	Not stated.....	Raleigh.....	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	1st Wed., Oct.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh.....	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	January, 1908.....	Rochester.....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	2d Wk. Th. Jan.	St. Paul.....	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	March, 1908.....	Philadelphia.....	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n.....	Monthly.....	Philadelphia.....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	Jan. 16, 1907.....	Omaha.....	Hans Jensen, Weeping Water.
Genesee Valley V. M. Ass'n.....	1st and 3d Thur. of each month	Manhattan.....	Hugh S. Maxwell, Salina.
Iowa Veterinary Ass'n.....	Nov. 19, 1907.....	Not decided.....	J. P. A. Houde, Montreal.
Minnesota State V. M. Ass'n.....	Monthly.....	Pullman, Wa.....	Gustave Boyer, Rigand, P. Q.
Pennsylvania State V. M. A.....	An'l, Jan., '08.....	Indianapolis.....	D. A. Piatt, Lexington.
Keystone V. M. Ass'n.....	2d Thu. ea. mo.	St. P.-Minneapolis.....	Wm. D. Mason, Pullman.
Colorado State V. M. Ass'n.....	Xmas week.....	Auburn, Ala.....	E. M. Bronson, Indianapolis.
Missouri Valley V. Ass'n.....	June, 1908.....	Philadelphia.....	E. P. Flower, Baton Rouge.
Rhode Island V. M. Ass'n.....	Monthly.....	Philadelphia.....	Louis P. Cook, Cincinnati.
North Dakota V. M. Ass'n.....	Monthly.....	Philadelphia.....	J. C. Robert, Agricultural Col.
California State V. M. Ass'n.....	Monthly.....	Philadelphia.....	C. L. Willoughby, Experiment
Southern Auxiliary of California State V. M. Ass'n.....	Monthly.....	Philadelphia.....	B. T. Woodward, Chicago.
South Dakota V. M. A.....	Monthly.....	Philadelphia.....	S. C. Neff, Staunton.
Nebraska V. M. Ass'n.....	Monthly.....	Philadelphia.....	W. H. Martin, El Reno.
Kansas State V. M. Ass'n.....	Monthly.....	Philadelphia.....	A. F. Mount, Jersey City.
Ass'n Médéciale Veterinaire Française "Laval".....	Monthly.....	Philadelphia.....	E. M. Ashbaugh, Wash., D. C.
Province of Quebec V. M. A.....	Monthly.....	Philadelphia.....	R. J. Stafford, U. S. Yards.
Kentucky V. M. Ass'n.....	Monthly.....	Philadelphia.....	B. H. Merchant, Little Rock.
Washington State Col. V. M. A.....	Monthly.....	Philadelphia.....	E. S. Bausticker, York.
Indiana Veterinary Association.....	Monthly.....	Philadelphia.....	R. H. McMullen, Manila.
Louisiana State V. M. Ass'n.....	Monthly.....	Philadelphia.....	E. T. Davison, Helena.
Twin City V. M. Ass'n.....	Monthly.....	Philadelphia.....	C. H. Sweetapple, Fort Saskatchewan, Alta., Can.
Hamilton Co. (Ohio) V. A.....	Monthly.....	Philadelphia.....	
Mississippi State V. M. Ass'n.....	Monthly.....	Philadelphia.....	
Georgia State V. M. A.....	Monthly.....	Philadelphia.....	
Soc. Vet. Alumni Univ. Penn.....	Monthly.....	Philadelphia.....	
Virginia State V. M. Ass'n.....	Monthly.....	Philadelphia.....	
Oklahoma V. M. Ass'n.....	Monthly.....	Philadelphia.....	
Veterinary Practitioners' Club.....	Monthly.....	Philadelphia.....	
Vet. Ass'n Dist. of Columbia.....	Monthly.....	Philadelphia.....	
B. A. I. Vet. In. A., Chicago.....	Monthly.....	Philadelphia.....	
Arkansas Veterinary Society.....	Monthly.....	Philadelphia.....	
York Co. (Pa.) V. M. S.....	Monthly.....	Philadelphia.....	
Philippine V. M. A.....	Monthly.....	Philadelphia.....	
Montana State V. M. A.....	Monthly.....	Philadelphia.....	
Veterinary Ass'n of Alberta.....	Monthly.....	Philadelphia.....	

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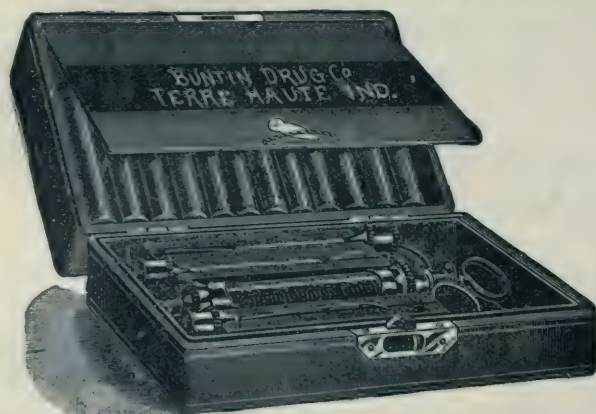
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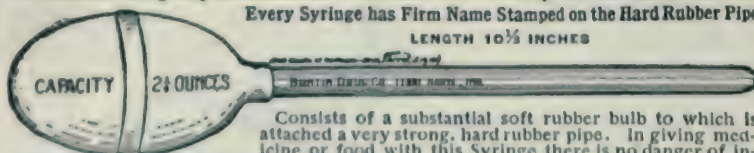
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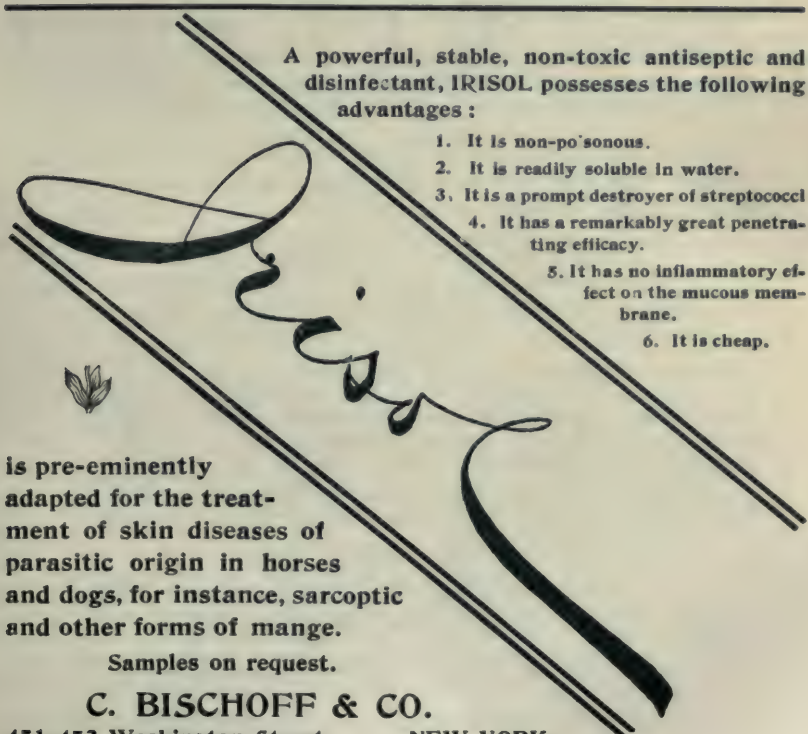
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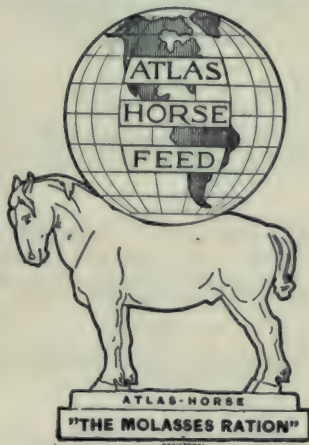
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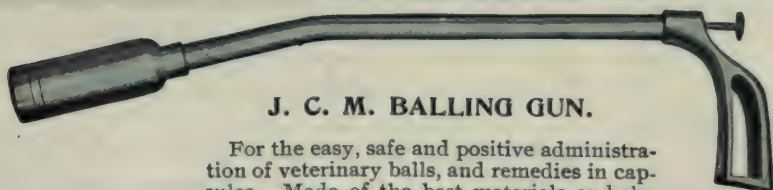
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AMERICAN VETERINARY REVIEW.

NOVEMBER, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, September 15, 1907.

THE NATIONAL VETERINARY ASSOCIATION OF ENGLAND.—The great annual meeting of our National Association has taken place. Our issue of October has sent to the world the news of the good work done at Kansas City, and probably this number of the REVIEW will bring again some reminiscences of the veterinary gathering of Sept. 10th, at the New Casino.

We must not, however, remain blind nor ignorant of what veterinarians in other parts of the globe do on the question of professional gatherings, of national veterinary meetings.

It is true that the United States Veterinary Medical Association was the first of its kind in the whole world, and the American Veterinary Medical Association is but the same with a new name, perhaps no better! And if the 44th annual meeting has just closed, we can congratulate ourselves on having shown to the world at large that if the veterinary profession was the youngest in the Western hemisphere, she, however, realized the advantages of such national professional force, before it was dreamed of in the Eastern.

I am not sure that I am going to sin by ignorance, but I believe that, with the exception of Great Britain, a national association of veterinarians does not exist in any other country. England has followed in our steps. The American Veterinary Medical Association has just closed its 44th meeting; the annual meeting of the National Veterinary Association of England was adjourned after two days' meeting in July last.

The meeting was held at Great Yarmouth and opened on the 24th of that month. After a short speech of cordial and sympathetic welcome made by the Mayor of that city, the meeting set to work, namely, listening and discussing a paper on "Intestinal Parasites of the Ox and Sheep," by Prof. Cave, which was followed by one on "Dental Anomalies and Their Significances," by Prof. O. Charnock Bradley. On the second day Prof. Wooldridge read one on "Actinomycosis and Botriomycosis," and finally Mr. Stococks read one on "Sterility in Mares."

There was also, of course, a banquet and a sea trip for the ladies. At each of the readings of the four scientific meetings there was a brisk and interesting discussion carried on in the most harmonious manner, says one of the *comptes rendus*. All the necessary arrangements worked smoothly and without a hitch to the universal satisfaction, and there was only one regret to express, an old grievance! "We should like," says the reporter, "to see the profession as a whole take a more active interest in the National Veterinary Association than has yet been the case. The present congress was well attended, but, like all of its predecessors, fell far short of what might be if all practitioners were of our mind regarding the importance of such gatherings. A society holding meetings all over the country should have a membership roll consisting of half the profession, at least."

This may be much to expect, but anyhow I am sure the A. V. M. A. might demand the same. The meeting at Great Yarmouth had upwards of 200 members and ladies present. I wonder how many we were at Kansas City.



ARTIFICIAL FECUNDATION IN MAMMALIA.—Since the celebrated experiments of Spallanzani in 1770, where he succeeded in demonstrating practically the possibility of successful artificial fecundation, the subject has not been ignored and the experiments that have been carried out in the two hemispheres

by human gynæcologists and by veterinarians have shown the advantages that could be derived from it from many points of view.

In the last portion of Vol. XII. of the *Archives des Sciences Biologiques*, published by the Imperial Institute of Experimental Medicine of St. Petersburg, Nos. 4 and 5, there is from the pen of Elie Iwanoff, a long article on the subject, entitled "Artificial Fecundation in Mammalia," which is a long review of all that has been done and written on the subject and gives a minute description of all the experiments that he has made in horses, cattle, sheep and other mammalia.

The entire work is divided in two chapters, considering, first, the artificial fecundation with spermatozoids in their natural element, and, second, that with spermatozoids in artificial media. The experiments, in fact, were carried out under these two headings.

The bibliographical review is very complete, and it was a pleasure for me to find among the many experimentators, who have written and experimented and who were living in every country of the world, to find the name of our good friend and esteemed collaborator, Prof. Leonard Pearson, who is mentioned as having successfully realized an artificial fecundation, and having declared that the method was adopted on many farms in America. I was looking in the article of our Russian colleague also for the name of Dr. Knowles, who has written much on the subject of sterility in large females and on artificial fecundation, and who also, I believe, has invented several instruments for the proper operation. I did not find the name of Dr. Knowles, but an acknowledgment of the work done by an American, whose name Elie Iwanoff did not know. Perhaps he meant to refer to the late President of the A. V. M. A.

* * *

To review *in extenso* the long article of the *Archives des Sciences Biologiques* would take more space than this chronicle

allows me, and the consideration of the many experiments made by the author would be imperfect, if shortened or abbreviated. I must satisfy myself in extracting only a few of the important conclusions that follow the careful examination of the work done. Among these conclusions, let me mention only the following:

(1) *In relation to the artificial fecundation by spermatozoids in their natural fluid.*

(a) The sexual excitement of the female, occurring during coit, is not a necessary condition for conception.

(b) The proportion of conceptions resulting from artificial fecundation is superior to the proportion ordinarily observed in natural fecundation.

(c) The duration of the gestation is normally of about 11 months (in mares). Delivery takes place without complications. The products of artificial fecundation are not inferior in structure and development to those from natural coit. No deformity has been observed. Sexual maturity is normal.

(d) In a whole series of cases of anomalies and diseases of the female genital apparatus, artificial fecundation acts as a precious means in the struggle against sterility.

(e) Sperm secreted by the male and collected at the moment of coit can be injected to a whole series of females. 10 c.c. of sperm are sufficient for a conception. From 100 to 300 c.c. of sperm are usually secreted by a horse.

(f) Sperm can also give conception when mixed with solutions of mineral salts (soda) or with blood serum. The products thus obtained do not differ from normal ones.

(g) From experiments made on mares, cows and ewes, success is more certain when freshly collected sperm is injected in the neck of the uterus. Also injections of sperm in the vagina of ewes may be followed by conception.

(h) The most convenient time for fecundation is when the rutting condition is most marked.

(i) Injections with sperm not fresh give many cases of failures; yet it has been demonstrated that it is possible to transport

sperm some distance, providing it is not beyond two hours' journey.

(j) It is not necessary that the sperm should be at the temperature of 36° - 37° C.

* * *

(2) *In artificial fecundation by spermatozooids in artificial media.*

(a) The products of secretion of the accessory genital glands can be replaced without danger for the vitality of the spermatozooids, by artificial media, such as solutions of mineral salts, blood serum. Experiments on cows and mares made in that way, show that success is as certain as if natural sperm was used.

(b) The possibility of resorting to artificial media to take the place of the secretions of accessory genital glands increases considerably the field of application of artificial fecundation. Conception has been produced in using spermatozooids taken from the testicles after castration or even after their removal after death.

(c) In the excised testicle spermatozooids live rather a long time, at any rate about one week at least, if the temperature remains at 2° C. Consequently spermatozooids contained in the epididymis can be transported to a distance that may demand 24 hours' traveling.

(d) Artificial fecundation, as far as a method to be applied, must become of great usefulness in the studies of the question of heredity, of the influences upon spermatozooids of the various physical and chemical factors and of the possible anomalies of the products thus obtained.

(e) The urine of horses is very nocive to spermatozooids of that animal.

* * *

THE VASOGEN COMPOUNDS.—The veterinary world here has been stirred lately by the introduction into veterinary therapy of new agents which have given occasion for much writing in

veterinary publications. I am referring to the preparations that go under the name of *Vasogenes*. What are they?

For years, animal fats (lard, suet, etc.), have been displaced in pharmacology by vaseline. By treating with oxygen, under pressure, and at a certain temperature, the heavy oils of Russia, free of their most volatile products, a German chemist, Krever of Cologne, obtained new substances, which can be mixed with water. These products of oxidation combined with ammonia form a lasting emulsion, which can be mixed with water: they are the *Vasogenes*, which have the property to dissolve most of the ordinary drugs and then render their use much easier. They have the same consistency as liquid vaseline, have a brown-yellowish color, a density of about 0.891 and a slight alkaline reaction. They form with water emulsions that are lasting, constant and whitish. They dissolve iodine, iodoform, camphor, chloroform, salicylic acid, ichthyol, mercury, bi-iodide, etc.

The preparations thus obtained mix very readily with the liquids of the organism, normal and pathological secretions of the skin, mucous or serous membranes, of the glands, tissues, skin, etc., and are absorbed entirely and readily. They are rapidly absorbed by internal and external teguments and carry with them the medicaments they have been mixed with and render their action more rapid and certain. The urine of an animal, upon which frictions of iodined vasogene has been made, contains iodine one hour after the friction. Simple vasogene has no toxic property and its action is efficacious only when it is incorporated with a drug.

* * *

Several mixtures of vasogenes have already been experimented with and the results made known.

Mr. A. Elvire, in the *Semaine Veterinaire*, mentions the iodined vasogene or *iodosol*, which he has used with success in several cases of sore throat in cattle and young horses. The blemishes left by its application are less serious than those of

mustard poultices. In mange of dogs, it has proven superior to any preparation of sulphur. There is no doubt that in lymphangitis, in tendinous or articular sprains, in windgalls or similar affections where alterative and counter-irritating effects are indicated, iodosol may prove advantageous and of easy and neat application. Skin diseases, granular dermatitis, have been successfully treated with it also.

Pyoctosol is another vasogene, which gives excellent results in the treatment of wounds, preventing or controlling tetanus, septicæmia or suppuration.

Cadosol, or vasogene with oil of cade, is indicated for the treatment of all skin diseases.

Iodhyrgigen, vasogene to the biniodide of mercury, is called to take the place of the red ointment so extensively known and used. All affections and blemishes of the extremities, splints, ringbones, sidebones, exostoses of all kinds, will be treated with it.

Creosotosol, solution of creosote in vasogene, will find its indication for internal use in case of sore throat, laryngitis, bronchitis, pneumonia, etc.

Iodoformosol, vasogene and iodoform, is used externally in solutions for the treatment of all kinds of wounds.

Taken all in all, it is a general revolution that those compounds are introducing into veterinary therapeutics, and to all appearances their advantages are very great. We certainly ought to welcome them, as everything that will improve general practice.

* * *

TALLIANINE IN THE TREATMENT OF TETANUS.—I do not suppose it is very necessary for me to call the attention of our readers to the many advantages that our practice has already derived from the use of Tallianine, but I may be permitted to mention a communication which was made lately by Mr. Cagny, the worthy honorary member of the N. Y. C. V. M. A. in this country. I believe the application of Tallianine in this case is

probably unique in veterinary therapeutics, or, at least, if it is not, all my researches in that direction have been unsuccessful. Here is the case as recorded by the authors:

"We had been called to visit a Percheron mare which was suffering with lockjaw. Previous to the veterinarian being called and with fear of lung troubles being the cause of the symptoms exhibited by the animal, a large mustard poultice had been applied on the loins, and, of course, the irritation that it produced had, so to speak, acted as a stimulant to the manifestations of the nervous affection; the tetanic symptoms were so severe that a fatal termination seemed unavoidable. Nevertheless, the mare was given 30 c.c. of Tallianine at 12 o'clock and 20 c.c. six hours later. The mare was placed in complete obscurity and every three hours she had 10 grammes of chloral in rectal injections. Oats and hay tea at discretion, with soda sulphas and bicarbonate. The next day she received three injections of 10 c.c. of Tallianine and also the third and the fourth day, when manifest improvement took place. This was such that the animal could almost be considered as entering upon convalescence, and the administration of Tallianine was suspended. On the sixth day, however, all the bad symptoms had returned and were more severe than ever. 50 c.c. of Tallianine and chloral injections were started again; 20 c.c. were administered the next day, and by degrees the recovery progressed, activated by the administration of Tallianine twice a day in 10 c.c. doses, and later on only once a day. This was kept up until the twenty-third day, when it was stopped, recovery being complete."

Was this case of tetanus one of those that recover of themselves with time, or had Tallianine any effect in the recovery? It is certainly worthy of attention.



FRAUD WITH TUBERCULIN.—Under the title of "Failures of Tuberculin," I read in the *Semaine Veterinaire* a rather amusing story, which deserves to be retold. It is taken from journals

of the Argentine Republic. The new discovery is due to the police, although it was suspected by the Secretary of Agriculture and the official veterinarians. But still it was not positively found out. The veterinary service could not, anyhow, be accused of neglect, as it has nothing to do with the direct survey of the quarantine, where cattle are kept when disembarked. Inspectors that are not veterinarians have charge of this, and this defectuosity in the organization has been taken advantage of by numerous importers, who have thus shown that tuberculin was no obstacle for their tuberculous animals, and could not stop their importation. Give those animals an accoutumancy as perfect as possible and everything would go on smoothly. This condition was obtained by giving to the animals on board, during their trip across the water from England to America, regular and well calculated doses of tuberculin. Arrived at Buenos Ayres, the animals are kept in quarantine for forty days, watched by inspectors that are not veterinarians. At the expiration of the quarantine the official veterinarian tuberculines them again. If the reproducers come out of the test clear, they are allowed to enter. If they do not, they are sent back or killed. As the animals that come out of the quarantine are sold for enormous prices, it is of the greatest importance that the condition of accoutumancy be such as to allow them to get free from the test of the officials, and to render this condition more certain injections of tuberculin were given at night by those very men, not veterinarians, that were charged to watch them. The police discovered the work done during the night by these men, arrested them, as well as the importers that were in with them.

Very severe measures are to be instituted to correct and prevent the return of such treacherous doings.

I give this statement as I found it, but I doubt that it is very correct, as Prof. Lignieres is too shrewd a man not to have discovered the trick before it could have lasted long.

THE DIAGNOSIS OF GLANDERS BY CUTI-REACTION A FAILURE.—On previous occasions I have referred to the new means of diagnosis that has been brought forward by Prof. Vallée and others in relation to tuberculosis, and I have called the attention of our readers, not only to the cuti-reaction and ophthalmic-reaction by the use of tuberculin, but have also said a few words of what had been tried in the way of applying the same method of diagnosis with mallein in cases of doubtful glanders. Numerous experiments made by Vallée and Martel have already shown how little value can be placed on these methods, when resorted to for the diagnosis of glanders, and the last gentleman says positively that after experimenting on a large number of horses, he has observed that the cuti and the ophthalmic-malleinations do not give any satisfactory results. The reaction may be absent in animals which at post-mortem are found bearers of lesions of glanders. It is true, however, that then the lesions are very limited in their extent. Therefore, these malleinations cannot be depended upon. It is only when the animal is saturated with toxines that the reactions may manifest themselves.

However, the question is agitated, and the *Echo Veterinaire*, of Belgium, relates the observations that were made by two veterinarians, MM. Putzeys and T. Stiennon. These gentlemen made two sets of experiments. One on six horses condemned as suffering with glanders by the ordinary test of mallein. Among these four had also marked clinical symptoms of the disease. In three only was there a slight redness of the conjunctiva, which passed off very rapidly. In three horses out of four the cuti-reaction did not work any better; it failed in all.

The conclusions are that neither of these reactions, the cuti nor the ophthalmic, can be resorted to as a practical method of clinical diagnosis of glanders in horses.

These conclusions will probably settle the question, endorsing as they do, the many that have been made by the French experimenters.

"A COMPARATIVE STUDY OF TUBERCLE BACILLI FROM VARIED SOURCES" is a new pamphlet, Bulletin No. 96, issued by the B. A. I., containing the *comptes rendus* of a series of experiments made by the Chief of the Pathological Division, John R. Mohler, V. M. D., and his assistant, Henry J. Washburn, D. V. S. In recommending its publication, Dr. A. D. Melvin, Chief of the Bureau, states that the main objects of these experiments were to throw "further light upon the question of the intertransmissibility of the human and bovine types of tubercle bacilli." After relating these objects, the authors review the history of similar investigations, beginning with those of Theobald Smith, give the origin of the cultures used in the present investigations, the technique of the experiments, the morphological examinations, the pathogenesis with the tests upon rabbits, white mice, cats, dogs, goats, sheep and cattle, to conclude with the histological examinations of the lesions, the chemical reaction of glycerin-bouillon, and finally the conclusions, some of which present a special general interest.

"(1) While certain peculiarities of growth, morphology, and pathogenesis are observed with a fair degree of constancy in bacilli of human origin, nevertheless these characteristics are not universal, and notable exceptions are observed which would confuse those who would attempt to establish their origin by means of such characteristics.

"(2) A similar degree of constancy in the morphological, biological and pathogenic characters of the bovine bacillus is generally noted, but a certain range of difference has been observed, which, though apparently more limited than for the human bacillus, is nevertheless suggestive of aberrant forms.

"(3) Therefore the assertion, based solely on these facts, that a bacillus has a certain origin, can only be tentative, as bacilli from man have been found which conform in all respects to bacilli obtained from cattle.

"(4) Tubercle bacilli of widely different virulence may be encountered in different cases of bovine, as well as of human tuberculosis.

"(5) There is a certain proportion of cases of human tuberculosis in which may be found tubercle bacilli which are pathogenic for cattle.

"(10) There are human types of bacilli that are similar in morphology and biology, but vary as to their virulence; and, conversely there are bovine bacilli typical as to form and growth, but less pathogenic than those usually observed.

"(12) The question of the transmissibility of tubercle bacilli of bovine origin to man will not be here further discussed from these experiments; but sufficient evidence, in our judgment, has been adduced to warrant the adoption and enforcement of sanitary measures against the use of the meat and the milk of tuberculous animals, and to make it advisable to eliminate all tuberculous cattle from the herd or to sterilize all the milk therefrom. While the greatest amount of tuberculosis in man is undoubtedly caused by its spread from human to human, the frequency of his infection from animals should not be underestimated."

There are six illustrations in this little pamphlet, three of which are colored, and, as is always the case in publications of the Bureau, are typical and excellent.

A. L.

EPIZOOTIC LYMPHANGITIS IN PENNSYLVANIA.

Although precautions have been exercised to guard against the introduction of epizootic lymphangitis into this country it appears that a well-authenticated outbreak has occurred in the western part of Pennsylvania. It has been thoroughly recognized by State Veterinarian Pearson, and cultures made by the State Live Stock Sanitary Board have disclosed its specific organism, the *Saccharomyces farciminosus*—It is expected that at the next meeting of the Pennsylvania State Association an animal affected with this disease will be exhibited to those present.

"RAILROAD DISEASE" OF CATTLE.

In this number of the REVIEW, in the department of "German Review," Dr. J. P. O'Leary presents a translation from a

German contemporary concerning this affection, with differential symptoms from parturient paresis. One of the important points brought out is that Dr. O'Leary has seen the same disease among animals arriving at the Buffalo Stock Yards and we believe he is the first veterinarian in this country to identify it as the "Railroad Disease" of Europe.

MINNESOTA'S SANITARY CONTROL WORK.

An error is reported for the communication in the September REVIEW headed "Minnesota Goes Some Too." Owing to a miscalculation the appropriation for sanitary control work was given as \$135,000 for the biennium instead of \$170,000, as it should have been. This puts Minnesota ahead of any other state by the neat sum of \$35,000 for a biennial period.

DR. OLOF SCHWARZKOPF, writing from the Philippines, contributes to the "Army Veterinary Department" of this number of the REVIEW some of the tribulations of the army veterinarian, and for the December issue he follows up his subject with a suggestion for the establishment of an Army Board at Fort Riley.

THE VETERINARY SCHOOL OF CUBA.—On Sept. 21 and 23 the students of the Veterinary School of Cuba were examined in Havana, it being the close of the first of the three-year courses. The Provisional Governor, Mr. Magoon, has authorized this school to grant degrees in veterinary medicine. The examining board consisted of two members of the faculty and the following members appointed by the Provisional Governor on the recommendation of the Secretary of Public Instruction: President, Dr. N. S. Mayo, Chief of the Department of Animal Industry; Dr. R. Cowley, Dean of the Medical School of the University of Havana, and Dr. H. Valdivielso, Municipal Veterinarian of Havana. The Veterinary School of Havana is doing good work, but it should be incorporated as the School of Veterinary Medicine of the University of Havana. An effort is now being made in that direction at the present time.—(N. S. M.)

ORIGINAL ARTICLES.

TUBERCULOSIS IN HOGS, WITH SPECIAL REFERENCE TO ITS SUPPRESSION.

BY JOHN R. MOHLER, V. M. D., AND HENRY J. WASHBURN, D. V. S., BUREAU
OF ANIMAL INDUSTRY, WASHINGTON, D. C.

Presented to Forty-fourth Annual Meeting of the American Veterinary
Medical Association, at Kansas City, Mo., September 10-13, 1907.

INTRODUCTION..

Tuberculosis in the human family has been lessening materially during the past fifteen years, but reports from the various meat packing centers of the country fail to show the same encouraging condition regarding tuberculosis in hogs during the same space of time. It must be admitted that several localities have recently reported a decrease in the number of tuberculous swine sent from their farms during the past four years, but a review of the collective records of the country at large shows an increase rather than a decrease in the number of affected individuals among our pork-producing animals. Indeed, there is probably no disease of hogs, not even excepting hog cholera, which is causing heavier losses to the hog raiser than tuberculosis, and it is also the cause of the greatest loss to the packers, and of the most anxiety to the veterinary inspector of meats. This disease until recent years has been looked upon as of uncommon occurrence, and only of importance from a meat inspection standpoint. But to-day it must be considered as a general veterinary problem, easy of solution, and which should receive the careful attention of all sanitarians. The swine of this country, January 1, 1906, numbered 52,102,847, and their value at that time was \$321,802,511. From these figures one may partially realize the serious menace to the hog-raising industry which is offered by a disease which affects almost 1.5 per cent. of all hogs slaughtered at the abattoirs of this country which have federal inspec-

tion. Reports from European abattoirs show that tuberculosis is far more widely spread among their hogs than among ours, some of the returns showing as high as 5.5 to 7.5 per cent. It is to be hoped that the spread of the disease in this country may be checked, and that concerted action by the stock owners and veterinarians may lead to the complete eradication of this costly affection. The small amount of money required to begin hog raising and the quick returns on the capital invested make this industry an attractive one to the small farmer in most all districts. The hog will make a pound of gain on less food than most live stock and will profitably utilize waste food products of every variety if properly prepared for him. As tuberculosis in this species is chiefly acquired by ingestion the significance of the latter statement is obvious. Tuberculosis of hogs is closely associated with the same malady in cattle. The reason for this is apparent when one considers the close relations of these two species of domestic animals upon nearly every farm. The Bureau of Animal Industry is at present endeavoring to locate the infected farms, or at least the infected localities, and to ascertain the direct cause of its spread in these districts. Owing to the number of hands through which hogs go before reaching the abattoirs this is not an easy proposition, but it can and is being accomplished. Already through co-operation with the state authorities a large number of infected farms have been definitely located, the conditions on the farms have been investigated, the source of the disease determined, and methods for its suppression recommended. In Wisconsin the bureau and state officials have been working with these ends in view. When hogs have been found tubercular and the farm which they came located, the State Veterinarian has been notified, who is empowered by law to quarantine the premises of any farm when he suspects the presence of a contagious disease. He then applies the tuberculin test to the cattle on the farm and otherwise looks for the source of infection. This frequently results in finding the cattle tuberculous. Similar co-operation has recently been taken up with Nebraska, Iowa and Minnesota, and the results are equally en-

couraging. This co-operation with the state is of great value and the results would be of greater magnitude if state legislation could be secured, compelling the tagging of all hogs going to slaughter whereby these animals if found tuberculous could be immediately traced to their point of origin and the source of infection removed. It is evident that the suppression of hog tuberculosis would save the country millions of dollars annually, and when it is realized that there are vast numbers of tuberculous hogs killed in abattoirs having no inspection of any kind, it can be seen that the danger to human life from this source would at the same time be removed.

PREVALENCE.

As previously stated, tuberculosis of hogs is on the increase in certain states, while in others it is decreasing. As an example of the latter may be mentioned Wisconsin, in which the gradual decline of the disease may be attributed to:

(1) The state authorities have been making efforts toward requiring the pasteurization of all skimmed milk which is returned to farmers from the creameries.

(2) The hand separator is being more generally installed, which confines the disease to the single farm whose cows have been attacked.

(3) The earlier age at which Wisconsin hogs are marketed.

(4) The state officials have been doing good work in condemning tuberculous cattle in dairy herds, thus removing from the hogs their greatest source of infection.

The prevalence of this disease among swine must be judged from abattoir statistics entirely. Thus it has been noted from the records kept by the Bureau of Animal Industry that some sections of the country contribute a far greater proportion of diseased animals than others. Hogs from Arkansas, Oklahoma, Indian Territory and Texas are remarkably free from this disease, due probably to the method of caring for them, or rather the lack of caring for them. They are not hampered in feed lots as in certain sections where most of the disease is found, but

are allowed to roam over large areas of pasture and to shift for themselves. When they are found affected the majority of them show very slight lesions. No prolonged feeding is practiced in narrow bounds as in the corn belt. Moreover, there are relatively few dairies in these sections and likewise few tuberculous cattle. On the other hand, the pigs are carried from birth to maturity on some form of pasture, as alfalfa, oats, corn, cowpeas, sorghum, rape and peanuts, all the year around. The pigs of the forest region of Hungary which are pasture-fed are likewise rarely tuberculous, according to Hertwig, and there can be no doubt that swine fed on entirely vegetable food as corn and roughage are proportionately less affected than those fed on dairy products or behind diseased cattle.

A great many hogs in Texas are raised on alfalfa supplemented with corn, and the result is clearly shown in the bureau statistics which indicate that from January 1 to June 30 of this year only one-tenth of one per cent. of over 325,000 hogs slaughtered at Fort Worth showed tuberculous lesions, while only 51 or .015 per cent. were condemned as unfit for food. In striking contrast to this may be given the statistics for the same period of three cities in one of the leading dairy states, which show 3.1 per cent., 3.4 per cent. and 6.4 per cent., respectively, of the hogs slaughtered to be affected with tuberculosis. There are a large number of co-operative creameries in the territory contiguous to these three cities and the raw skimmed milk is taken home by the patrons of their hogs. Samples of separator slime from the two creameries in the town showing the largest number of tuberculous hogs were injected into guinea pigs, and in one instance virulent tubercle bacilli were recovered.

The hog buyers for packing houses are gradually becoming familiar with these conditions from bitter experience and are avoiding certain sections of certain states; and there are at least two eastern packers who will not under any conditions kill hogs from one of the badly infected states. In other localities the packers are beginning to take self-protective measures to have

the feeder of diseased hogs bear the burden, and many of the smaller establishments in the central west are buying hogs subject to post-mortem inspection. This attack on the farmers' purse will probably have more beneficial results in making him fully alive to the seriousness of the situation than any other procedure.

During the first six months of this year there were over 18,000,000 hogs slaughtered under federal inspection, of which about 1.5 per cent. were tuberculous. Of these tuberculous carcasses 74 per cent. were passed for food after tanking the diseased parts, 12 1-2 per cent. were placed in the lard tank after trimming out and tanking the tuberculous parts, and 13 1-2 per cent. were condemned for offal.

In an endeavor to trace out the origin of the infection of tubercular hogs that were arriving at one of the packing plants of Iowa, Rogers, of the Bureau of Animal Industry, for some time carried on an experiment which consisted of tagging the hogs that were hauled to market at that place in wagons before they were removed from the individual farmers' wagons, and later using these tags as means of identification in case tuberculosis was found to exist in any of them at the time of slaughter. In this manner 3,420 hogs were tagged, and on tracing them up to their final disposition it was learned that less than 6 per cent. of the farms were shipping all of the tuberculous live stock to that market, while more than 94 per cent. of the farms were free from the disease. This proportion of non-infected farms should give great encouragement to any efforts that may be made to eradicate the disease from the state. It was further noted that the successive shipments of hogs marketed by certain farmers always contained tuberculous animals, and in at least two instances the entire consignment were condemned for tuberculosis at the time of slaughter.

PATHS OF ENTRANCE OF TUBERCLE BACILLI.

As a result of numerous experiments conducted on hogs it has been quite conclusively shown that hog tuberculosis is an in-

gested disease and that the tubercle bacilli are absorbed almost at the beginning of the alimentary canal. The tonsils of pigs have been examined by several investigators, including ourselves, and tubercle bacilli have been found in the apparently normal tonsillar crypts. From the tonsils to the submaxillary glands is but a very short distance and on a direct line with the lymph current in the lymphatic vessels. This fact, taken into consideration with the infection of the submaxillary glands in over 93 per cent. of all tuberculous hogs, shows that the tonsils play a very important part as the portals of entry of the tubercle bacillus. Again, hogs may be called scavengers, as they eat various substances, rough or smooth, hard or soft, sharp or blunt; and wood, nails, wire, etc., may be taken into the mouth with other food in such a way as to cause sufficient abrasion of the mucous membrane to permit the entrance of the bacillus, and its absorption by the lymph vessels and subsequent deposit in the submaxillary gland, follow. Young pigs at the time of teething are particularly likely to become infected owing to the abrasions of the mucous membrane resulting from the new teeth. Catarrhal conditions of the buccal mucous membranes such as is observed in stomatitis also lower the vitality of the epithelial cells, allowing the entrance of tubercle bacilli. In a few cases the only lesions observed were in the mesenteric glands, which would indicate that the ingested bacilli had safely passed the usual portal of entrance and had been taken up by the lacteals of the intestinal tract and filtered out in the mesenteric lymph glands. Thus Ryder, in charge of the Boston station, has made a careful post-mortem examination of 59,460 hogs, of which number 50 carcasses showed lesions of the mesenteric glands only. Of far more frequent occurrence are the lesions of the gastro-hepatic glands and of the bronchial glands. In fact, our study of the lesions of hog tuberculosis shows that next in the order of frequency to the submaxillary gland infection come the combination of the submaxillary with the bronchial glands, then the submaxillary, bronchial and gastro-hepatic glands, next the submaxillary, bronchial, gastro-hepatic glands and the liver. In

a certain small number of cases infection probably occurs directly through the respiratory tract, but these instances are extremely rare. Even more infrequent are those cases of tuberculosis which arise as a result of traumatism, especially the infection of castration wounds by the use of infected instruments or otherwise. One boar has come under our observation whose testicles and mucous membrane of the penis were so markedly tuberculous that the genital tract of the sows covered by him could scarcely have escaped infection.

METHODS OF INFECTION.

The most frequent infection of hogs with tuberculosis occurs no doubt through the digestive tract, and in this infection tuberculosis of cattle is very intimately concerned. In those instances in which a marked increase in the number of tuberculous hogs from a certain locality has been noticed and investigated it has too frequently been found that the hogs in question had been fed upon the by-products of a cream separator or that the carcass of some animal succumbing to tuberculosis had been thrown to the hogs for final disposal.

The certainty with which either of the two conditions mentioned above will lead to the infection of the hogs had not heretofore been appreciated in many quarters. Another source of infection for swine has been shown to exist in the practice of allowing a lot of hogs to run behind a herd of tuberculous cattle, where the tubercle bacilli excreted with the feces by a tuberculous bovine may readily infect the hogs. Infection of a litter of pigs by a tuberculous sow presents another source of danger. Other methods of infection which may be mentioned and which will be considered separately below consist in the feeding of infected offal from slaughter houses, infected kitchen slops and in the exposure to sputa of tubercular attendants, to tuberculosis of fowls and to infection through castration wounds. These sources of tuberculosis, however, should be considered of minor importance and must not detract attention from the leading factors in the production of the vast majority of cases of hog tuber-

culosis which are unquestionably the milk and faeces of tuberculous cattle. Control these and tuberculosis of swine will at once be greatly reduced.

HOGS AFFECTED BY MILK OF TUBERCULOUS COWS.

Numerous experiments have been conducted by various scientists in many countries which show a great unanimity relative to the ease with which hogs may contract tuberculosis from being fed on milk of tuberculous cows. Thus Gerlach, Zurn, Bollinger, Wesener, Bang, Peuch, Ernst, Pearson, Hills and Rich and others have shown that pigs so fed have become tuberculous in as high as 100 per cent. of the hogs fed. Furthermore, the experiments of the Bureau of Animal Industry have shown similar results. When hogs were fed on tuberculous milk for only three days the post-mortem examination held 107 days later showed that 83.3 per cent. of the hogs had become tuberculous. When hogs received tuberculous milk for 30 days and were allowed to live 50 days later 100 per cent. of the animals had developed generalized tuberculosis. That similar experiences occur under natural conditions on the farm has been proved by tracing certain shipments of tuberculous herds to the farm where they were raised and fattened. In one instance a shipment of 74 hogs showed tuberculosis in 61, and investigation brought out the fact that the swine had been fed on the skimmed milk of a creamery in a nearby town. The separator slime from two of the creameries in this town was obtained for experimental purposes and the inoculation test showed that one of these samples produced tuberculosis in all the guinea pigs inoculated. It is also of interest to know that the hogs slaughtered by the abattoir in this same town for the six months ending June 30, 1907, were tuberculous in 6.4 per cent. of the cases, and in March showed the large percentage of 6.69 per cent.

At the present day centrifugal separators have come into general use in most creameries, and upon many dairy farms, for the removal of the cream from the remaining portions of the milk. During this process the rapid revolutions of the shaft

and discs of the machine thrown down at the base of the shaft a deposit consisting of dirt, hair, manure and other impurities which may have found their way into the milk and, mingling with this mass, bacteria may also be found in great numbers.

The charge has been repeatedly made that tubercle bacilli are scattered by means of the common practice of distributing the separated milk, or the separator refuse, among the farmers who constitute the patrons of the creamery. Such charges as this should not be made unless some evidence can be presented in substantiation; therefore careful search has been made of samples of the separator sediment from a number of creameries located in widely removed dairy regions to see if they really harbored virulent tubercle bacilli.

When first received at the laboratory this material is examined microscopically. Following this examination all samples, whether showing the presence of suspicious bacteria in strained preparations or not, are ejected into guinea pigs where the presence of living tubercle bacilli is soon made manifest by the development of tubercular lesions. As a result of this examination of the products from 15 creameries it has been definitely shown that 5 or 33 1-3 per cent. of the samples examined contained virulent tubercle bacilli.

While there are many creameries which are managed on a mutual benefit system by the dairymen of the region in which they are located, to which no milk containing tubercle bacilli is delivered, and from which the separated milk when divided among the creamery patrons is free from tubercle bacilli, and consequently furnishes a safe and valuable article of food for the calves and pigs to which it is fed, there are, unfortunately, others, as above indicated, which receive milk daily from one or more cows so affected with tuberculosis that they excrete tubercle bacilli, and these find their way in large numbers into the cans of separated milk which are returned to the farmers from these creameries.

In this way a single cow with a tuberculous udder may spread the disease to numbers of hogs and may also infect many farms

in a large section of country that have never been contaminated before with this destructive disease. While this particular means of disseminating tuberculosis could be absolutely prevented by sterilizing the milk, this simple precaution is in the majority of cases not taken.

In one state where hand separators are quite frequently used on the farm a bunch of tuberculous hogs which contained 36 per cent. of tuberculous animals was traced to the farm of the raiser, and the state authorities were notified, who made a tuberculin test of the cattle producing the milk, with the result that about 22 per cent. of them reacted. It will thus be seen that creameries are not alone incriminated but the skimmed milk from the hand separator, if it comes from a tuberculous herd, is equally dangerous, and the buttermilk produced at the creamery from the infected separated cream is likewise capable of carrying tubercle bacilli and infecting the animals which consume it. The one great advantage from a hygienic standpoint which the hand separator has over the public creamery is that the milk from an infected herd is usually fed to the one bunch of hogs while the skimmed milk from the creamery is generally all mixed together in a vat and each farmer takes back with him his pro rata of skimmed milk, which is most likely to be produced by several herds of other people's cattle. Hence the skimmed milk of but one tuberculous herd is liable as a result of this practice to contaminate the entire product of the vat into which it is placed. For this reason it behooves hog raisers to see that their skimmed milk has been properly heated before they feed it, and the state authorities to make such heating by creameries compulsory as a simple and easy way of greatly reducing hog tuberculosis.

INFECTION BY FAECES OF CATTLE AND HOGS.

A very prolific source of infection of hogs with tubercle bacilli and one which closely rivals tuberculous refuse from public creameries is to be found in the faeces of tuberculous cattle. It is a very common practice to allow hogs to accompany cattle about the feed lot, and while doing this they thoroughly work

over the fæces, thus saving whatever portions of food have passed undigested through the alimentary tract of the bovine. In herds that are healthy this manner of feeding is to be commended because of the economy, but wherever there are tuberculous animals among the cattle the danger of passing the infection on to the hogs by means of the fæces becomes very great.

In a series of investigations which were carried on by the bureau it was found that the fæces of tuberculous cattle are often loaded with tubercle bacilli. To test their virulence tuberculin-tested hogs were placed in isolated pens where a few shovelfuls of such fæces were thrown daily while the hogs were fed upon other food which was free from tubercle bacilli. The result was the infection of 25 per cent. of the first lot of hogs and 100 per cent. of the second lot that were exposed. The tuberculous condition of the cattle was only shown by the tuberculin test, as they were apparently healthy, having no cough or any visible indications of disease. A somewhat similar experiment was performed by exposing tuberculin tested hogs solely to the fæces of healthy cattle that were swallowing small quantities of tubercle culture in their drinking water. The exposure lasted 81 days, with the result that 75 per cent. of the first lot and 100 per cent. of the second lot of hogs contracted tuberculosis. In a recent examination at the Bureau Experiment Station of the manure passed by 12 cows just purchased from dairy farms in the District of Columbia and affected with tuberculosis to an extent only demonstrable by the tuberculin test, tubercle bacilli were found by Schroeder in over 41 per cent. of the cases, both by microscopic examination and by guinea pig inoculation. The result of this test led to the suggestion that tuberculous hogs might equally well serve as distributors of tubercle bacilli by means of their fæces, and an experiment is now being carried out in which a litter of healthy pigs is being exposed to possible infection by being brought in contact with the fæces of hogs that are known to be affected with lesions of tuberculosis. All other possible sources of infection have been excluded and development of

tuberculosis by any of the pigs will point positively to the faeces as the carrier of the tubercular infection.

Only recently a probable instance of infection of hogs by cattle faeces came under observation. Of 34 hogs which were marketed by Mr. H—— 23 were found diseased, and upon investigation it was ascertained that the owner had a herd of dairy cows, the stable manure from which was thrown into the hog yard. The hogs were given no milk, nor were they permitted to mingle with the cattle, but were pastured and fed on corn and what they could gather from the cow manure. In fact the latter form of exposure was the only plausible explanation of infection, and this was later accepted when the tuberculin test of the herd revealed 19 out of the 27 cows diseased, which test was confirmed when the cattle were slaughtered and found to be tuberculous, some in an advanced stage.

HOGS FED ON TUBERCULOUS CARCASSES OR SLAUGHTER-HOUSE OFFAL.

It is an all too prevalent custom in some sections for hog raisers to buy up all carcasses of animals that have died from various unknown causes and feed them to their hogs. This is a fertile source of infection with parasites and with whatever infectious disease the animal may perchance have died. Several instances of tuberculous hogs being traced to such an exposure have been found. Probably the most important case occurred in an eastern station where 31 out of 40 hogs were condemned for tuberculosis. When these animals were traced back to the raiser it was found that he was running a large dairy and that a dairy inspector had by clinical examination condemned one his cows for advanced tuberculosis. The owner in order to save something, as he stated, from the carcass, hauled it out to the hog pasture and allowed them to consume it with the above disastrous results. Previous hogs that had been raised by him had never been condemned, and the bunch in question were running on a large pasture separated from cattle and apparently had no other

opportunity to become infected than by the condemned tuberculous dairy cow.

An equally dangerous source of infection is likewise observed in the methods which obtain among some of the small country slaughter houses. It is not unusual for these houses to get rid of their blood, intestines, viscerae and other inedible parts by feeding them to hogs, a herd of which is usually kept on the premises. This custom is pregnant with danger and is another fertile source for perpetuating the infectious principle of various infectious and parasitic diseases, and particularly a dietetic disease like tuberculosis. The feeding of offal, etc., to hogs on the premises of abattoirs having government inspection is not permitted by the Federal Meat Inspection Regulations, and other state and municipal regulations should be equally stringent on this feature, as has been done in the meat regulations of the City of Philadelphia. We have no records of such hogs being tuberculous as they are killed by the butcher on the premises on which they are fed. As these houses have no inspection the carcasses are marketed as healthy.

INFECTION FROM DISEASED BROOD SOWS.

A case of this character was thoroughly investigated by Clancy, of the Bureau of Animal Industry, which is full of instructive features.

It had been noticed that a certain shipper of hogs to the East St. Louis market occasionally sent in a load containing many tuberculous animals, and close inquiry and consultation of shipping records showed that these loads were mainly composed of hogs from one and the same farm. An inspector was consequently detailed to visit this place and to uncover, if possible, the source of such wholesale infection. In his report to Washington he writes:

"But four cows are milked and no part of their milk is fed to pigs. The brood sows are kept in several widely separated lots on different parts of the farm and they are moved about frequently.

"A physical examination, it would seem, is of minor importance when we consider the evidence which points conclusively to the fact that several of the brood sows must surely be tuberculous." He next states that 28 tuberculous hogs were shipped from this farm in May, 1902. In July, 1904, 11 affected hogs left the farm, and in September of the same year 14 others followed and were condemned by federal inspection at the abattoirs. In 1905 27 tuberculous swine were shipped from this farm, making a total of 80 animals which had contracted tuberculosis on this farm within a period of four years. It was further shown that a year or two previous to the first appearance of tuberculosis among the hogs of this farm the owner had purchased some imported cattle from a neighbor who was engaged in importing cattle from England. Some of the cattle from the importer's farm were slaughtered at about this time and were found to be so badly infected with tuberculosis that the carcasses were totally destroyed. Tuberculosis was conveyed from the importer's farm to the farm under investigation, and after a time made itself manifest among the cattle on the place with the result that one of them died. Her carcass was hauled out to the feed lot and turned over to the hogs. After this date constant trouble had been experienced through the development of tuberculosis by the hogs of this field.

We must infer that the brood sows on this farm became affected through eating the tuberculous carcass of this cow, and that retaining the disease, they continued to infect their offspring for several seasons following. The sows were retained from year to year while their litters were fattened and sent to market, and it was in these young animals that tuberculosis was found to have developed to such remarkable proportions.

M'Fadyean reports that a litter of young sucking pigs was referred to him for investigation because they were unthrifty, dull and purging. The remaining swine of the farm, consisting of a boar, three sows and another litter of young pigs, all appeared to be perfectly healthy. The pigs were about seven weeks old

at the time of the examination, and in spite of this early age all of them were found to be affected with generalized tuberculosis. No report of the sow which produced these pigs could be obtained other than the statement that she appeared to be quite healthy with no evidence of mammary tuberculosis. M'Fadyean considers it more than probable that a post-mortem examination of this brood sow would have revealed either tuberculosis of the generative organs or of the mammary glands. The first pig examined led M'Fadyean to decide that infection must have occurred previous to birth, while the lesions of the other two indicated a later infection by way of the digestive canal.

In an experiment conducted by the bureau a sow was artificially infected by inserting a long hypodermic needle under the subcutaneous tissues of the mammae parallel with the skin, and in withdrawing a few drops of tubercle culture were allowed to flow gradually from the point of the needle. The litter of pigs born to this sow all became tuberculous, although the latter on post-mortem examination showed only six small subcutaneous abscesses the size of hazel nuts. Another experiment is now under way with a tuberculous sow having a litter of eight pigs; four of the latter are placed in a pen by themselves into which is thrown the faeces of the mother. Precautions have been taken to prevent any other source of infection. The remaining four pigs are likewise kept in a separate pen into which the sow is permitted to go only for the purpose of allowing the pigs to suckle. This experiment, which is intended to ascertain the danger of the faeces and the likelihood of contracting tuberculosis from the milk of an extensively infected sow has not as yet been completed.

INFECTION BY TUBERCULAR ATTENDANTS.

Attendants and caretakers who feed and care for the hogs should be free from tuberculosis since hogs are susceptible to human tuberculosis, as has already been stated. Bang records the appearance of tuberculosis among hogs on a farm where the disease had never been seen before, which resulted from tuber-

culous attendants who were in the habit of spitting in the hogs' food and about the premises.

Judging from his comparative tests of human and bovine tubercle bacilli Dinwiddie reached the conclusion that pigs "are susceptible to infection with both bovine and human tubercle," and to judge from this test "bovine tubercle is no more active for these animals than human sputum. The kind of pathological changes induced in the two cases are identical. The liability to generalization of the disease in pigs, a feature which has been noticed by other orservers, is noticeable also in these inoculation experiments."

In a later review of these tests Dinwiddie states "pigs were found to be readily infected and prone to suffer from a generalized disease by inoculation and feeding with both varieties of tubercle or tubercle bacilli in cultures."

The British Royal Commission on Tuberculosis have also shown that hogs are susceptible to human tuberculosis. This commission considers the power of resistance of hogs to the human tubercle bacillus to be considerably less than that possessed by cattle.

Knese reports the infection and loss of an entire litter of 3-months-old pigs consisting of 11 animals. These pigs had been bred upon the premises from healthy stock and all possible sources of infection could be eliminated save that of sputum from a tuberculous daughter of the family, who was very sick with tuberculosis of the lungs during the entire summer and who died from the ravages of this disease in the fall. During the progress of the disease the young woman coughed badly and raised large amounts of expectoration which was collected in a dish at the bedside. This dish was emptied into the yard each morning, then washed out, and the wash-water was likewise thrown out into the door-yard. The small pigs had liberty to run about in the door-yard each day and undoubtedly became infected through contact with the human tuberculous sputum which was so freely placed within their reach.

In a recent conversation with Ryder, in charge of the Boston station, he informed us that out of a lot of 76 hogs which had been fed upon swill gathered from some of the hotels of Boston, 37 were found to be tuberculous at the time of slaughter. It is, of course, impossible to state positively that these animals were any of them infected through infectious material gained from tuberculous people at these hotels, but because of the possibility of such contamination the case is mentioned. It should be stated in this connection that the cattle on this farm were healthy, having been frequently tested in the last three or four years, and there was no other apparent source of infection than the hotel swill.

INFECTION FROM TUBERCULOUS FOWLS AND CASTRATION WOUNDS.

The association of pigs and fowls has suggested the possibility in European countries that in some cases tuberculosis of hogs may result from exposure to chickens affected with tuberculosis. As avian tuberculosis is extremely rare in this country little importance should be attached to this method of infection, although the finding of avian tubercle bacilli in hog tissues by Weber and Bofinger indicates that hogs are susceptible to this form of the disease.

The danger of infection of the scrotum at the time of castrating hogs through the contaminated knife of the operator or otherwise has been reported by Meyer. This method of becoming diseased is likewise of such rare occurrence that to mention it is sufficient for our purpose.

SYMPTOMS.

Few hogs ever show by outward symptoms that they are affected with tuberculosis. In fact, the hogs that disclose tuberculosis at the time of slaughter are frequently the finest appearing animals in the drove when they are brought to the abattoir. Should indications of tuberculosis be present they will usually consist of a general appearance of unthriftiness, which might re-

sult from other diseases and therefore does not afford any very definite indication that tuberculosis is present.

Where the disease progresses to an advanced stage of generalization various symptoms may appear. Abdominal tuberculosis is frequently accompanied by general disturbance of the digestive functions and constipation or diarrhea may be shown.

Advanced pulmonary tuberculosis will be shown by a persistent dry, harsh cough, and by acceleration in breathing especially on exercise. This cough is similar to that caused by lung-worms and cannot be differentiated from it.

Interference with both respiratory and digestive functions may be shown in case the disease is widely generalized, and the systemic alterations will be shown by progressive emaciation and weakness. Localization of the disease in bones or joints may produce lameness and other visible indications but these are comparatively very rare. In those cases where the disease is not characterized by prominent symptoms but where the animals are suspected of having the disease the tuberculin test is recommended. This makes it possible to slaughter the reacting animals in the early stages of the disease and thus obtain some remuneration for the carcasses and at the same time get rid of the infection. This is especially important in holding over brood sows as our experiments have indicated that both the milk and the faeces of these sows may contain tubercle bacilli and thus infect the young pigs.

TUBERCULIN TEST.

In reviewing the questions of detection and of eradication of tuberculosis in hogs it is noticeable at once that there are but few recorded instances in which reliable tuberculin tests have been made. This may be due to the fact that the temperatures of hogs are subject to rapid changes under conditions which would not cause noticeable variations with cattle. These alterations of temperature in individual hogs are so great within short spaces of time, and from apparently insignificant causes, that it seems at first glance that no change caused by the injection of

tuberculin could ever, guarded from outside influences, be sufficient to permit one to reach any definite conclusion as to the presence or absence of tuberculosis.

In the experiments of Schroeder and Mohler, of the Bureau of Animal Industry, recorded in Bull. No. 88, it was found desirable to keep the hogs as quiet as possible during the test, it having been shown that excitement affects the temperatures of the hogs very quickly. Each hog was therefore placed in a rectangular crate about twelve hours before the first temperature was taken, and remained in this confinement until the tuberculin test was completed. The crates, while large enough to permit the hogs to get up and down easily, were still close enough to prevent their turning around, or moving backward and forward to such an extent as to interfere with the insertion of the thermometers. Crates that are made 4 feet long, 1 ft. 2 in. wide and 2 ft. high, inside measurement, have proven entirely satisfactory in restraining hogs weighing from 50 to 150 pounds. Unless use is made of crates or of some other satisfactory means of restraint it is difficult, if not impossible, to obtain trustworthy temperatures of hogs.

The dose of tuberculin used was estimated on a basis of $\frac{1}{2}$ c. c. for each hundredweight or fraction thereof of the weight of the animals tested. For instance, a pig weighing 75 or 100 pounds, would receive $\frac{1}{2}$ c. c. of tuberculin, while one weighing 150 or 200 pounds would receive 1 c. c. The injections were made directly under the skin at the inner surface of the thigh, and in no instance were any harmful results noted following the puncture.

For a practical tuberculin test it has been found sufficient to have the temperature of the hogs taken every two hours from 8 a. m. to 6 p. m., inclusive, on the day of injection; and at the same hours on the day following, with the tuberculin injection made at 10 p. m. on the first day. The temperature before injection should be taken as frequently as after injection and at corresponding hours because of the very erratic character of the

temperature of hogs and because of the slight circumstances that may inadvertently be the cause of marked variations. It should especially be borne in mind that the value of the results obtained depends entirely upon keeping the hogs absolutely quiet during the whole of the test, and this point may be more readily gained if the animals are kept in their crates for 12 hours at least before the first temperature is taken.

In reaching a decision as to the presence of tuberculosis in a hog, as shown by the temperature readings, it is somewhat unsafe to base a condemnation upon the comparison of the maximum reading before injection with the maximum of the day following, but by averaging the temperatures for the two days during which they have been taken one is enabled to reach very satisfactory conclusions by comparing these averages. It is essential that the temperatures should be taken at corresponding hours on each day of the test if results are to be determined by means of averages. By this method it was found in a test experiment with 68 hogs that only two failures (less than 3 per cent.) occurred. In these tests no hog was condemned as tuberculous until it had shown a persistent average elevation of temperature of one degree throughout the second day. In the two failures mentioned one tuberculous hog failed to react and another animal gave a reaction, but at post-mortem examination no tubercular lesions could be found.

A report has been received from Dr. Luckey, State Veterinarian of Missouri, which shows that hogs may be tested satisfactorily and to good advantage with tuberculin if handled quietly and kept so closely confined that no chasing or driving will be necessary at the time of taking temperatures.

LESIONS.

The vitality of hogs or their powers of resistance to disease are necessarily lowered by the unnatural conditions which frequently obtain in hog raising, namely, the forced feeding for fattening and the small feeding pens in vogue in certain districts. When the enormous growth of a hog is considered, when it is

realized that in the short space of 8 or 10 months a hog's development is frequently 250 to 300 pounds, a proportionate increase of weight unknown to any other species of domestic animals, the great metabolic changes which must necessarily occur can be appreciated. And such rapid development is very likely to take place at the expense of the disease-resisting powers of the animal. When tuberculosis results the lesions usually observed are discrete and of chronic type, at times retrogressive and at other times slowly progressive, as manifested by calcareous deposits and fibrous encapsulation. It is not infrequent, however, that a more extensive and spreading disease is seen and the lesions indicate a severe infection and rapid generalization of the bacilli, which in these animals may quickly follow the initial attack. And whether the disease assumes an acute, sub-acute or chronic type, tuberculous growths may soon be found attacking lymph glands in widely separated parts of the body.

As the disease is essentially produced by ingestion the glands and tissues associated with the digestive tract are the most frequent seats of infection. Indeed the superior cervical glands (in almost all cases the submaxillary gland) are nearly always affected, as at the post-mortem examinations held by bureau inspectors over a consecutive period on 120,000 tuberculous hog carcasses, 93.3 per cent. were found to contain lesions in these glands. The large tonsils and the large number of lymph sinuses in the lymph glands probably account for this great frequency. Next in importance are the bronchial glands, of which 27.2 per cent. were diseased, while the gastro-hepatic chain of glands was involved in 21.6 per cent. of the cases. In all these cases the lesions may involve the entire lymph structure, or only the central or several irregular points, and may be either caseous, calcareous or caseo-calcareous. The mesenteric lymph glands showed lesions in 18.1 per cent. of the carcasses examined. The liver was affected in 9.2 per cent. of the cases and showed either yellowish miliary foci which were caseous and scattered not only on the surface but also in the parenchyma, or the larger irregular nodules varying from a hemp seed to a shellbark in size. They

are at times quite fibrous in consistency and may contain a caseous centre or calcification may occur as the disease advances and the alterations become more considerable. The lungs are the next tissue to be most frequently affected as is represented by 7.0 per cent. of the carcasses above recorded. The morbid anatomy of the lungs in this disease simulates that observed in human tuberculosis more than in cattle tuberculosis. In fact, the disease bears many points of similarity to infantile tuberculosis in the human. There may be tuberculous pneumonia, involving large areas of the lungs, causing collapse of the marginal portion. There may be irregular sized greyish or yellowish areas of caseation as is so often seen in cattle, but not infrequently there are observed large numbers of miliary grey or translucent foci showing evidence of generalization as a result of the bacilli being disseminated by the blood stream.

The picture presented by tuberculosis of the spleen, which showed lesions in 3.8 per cent. of the above carcasses, is very peculiar to one who is familiar only with cattle tuberculosis. The spleen is usually darker in color and the surface is quite rough and nodular, depending upon the number and size of the tubercles. Unlike the spleen of a tuberculous cow, these nodules occur not often on the serous membrane but in the parenchyma. They vary from the size of a half pea to as large as a shellbark. The external pale or light red nodules are raised above the surface of the organ and frequently show fibrous tissue bands radiating from the centrally necrotic area. The lesions observed in the mediastinal glands are similar to those in other glands and were noted in 1.8 per cent. of the cases, while the sublumbar glands were found affected in .9 per cent. of the carcasses. The serous membranes may show an eruption of tuberculous granulations and have been noted on the pleura in .1 per cent., and on the peritoneum in .006 per cent. of the cases. The generative organs are rarely affected. The bones, however, are more frequently attacked, those of the vertebral column, pelvis and of the articulated extremities showing tubercular affection in .007 per cent. of the carcasses. Tuberculosis of the muscles has been

noted but not so frequently as of the bones and joints. The extreme rarity of lesions in the kidney is shown by the finding of but 3 cases in the 120,000 tuberculous carcasses. As an examination of the prepectoral, prescapular and inguinal glands were not made in all instances no percentage will be given.

Occasionally, also, ulcers and tuberculous nodules are noticed on the mucosa or submucosa of the small intestines, especially of young pigs, but these likewise are rare, and when found usually accompany generalized lesions elsewhere in the body.

RELATION TO MEAT INSPECTION.

As you probably observed during your trip through the packing house this morning, the post-mortem inspection of hogs by the bureau officials is very thorough, and is so ordered that tuberculous animals are quickly separated from those that are healthy. Without making mention of the various hands through which the hog passes while being unloaded after his arrival at the city, yarded, sold, weighed, driven to the packing house, killed, scalded and run through the scraper, we will meet him at the point where, lying on the traveling table, his head is almost severed from the body. Here he is examined by a veterinary inspector of the bureau, who palpates and if necessary incises the submaxillary glands which have been exposed by the cut just made by the butcher for removing the head. Should these glands prove to be healthy the hog is allowed to pass down onto the rail unmolested; if, on the other hand, these glands are seen to be tuberculous, the animal is marked and is then run into a separate compartment called the retaining room, without being eviscerated. Most of the tuberculous animals are detected here at the header's bench, our records above given showing that 93.3 per cent. of the tuberculous hogs support lesions in the glands in the region of the throat.

From the header's bench the hogs which have not been tagged because of the tuberculous glands are sent along the rail to the gutter's bench, where another veterinary inspector is stationed, whose duties consist of examining each hog, giving spe-

cial attention to the viscera. His search is not limited to the detection of tuberculosis, but he must watch for any of the diseases proscribed by the regulations of the bureau. As there are a certain per cent. of hogs which support tuberculosis in the visceral organs without giving any evidence of the same in the cervical glands the inspector at the gutter's bench is able to detect a number of tuberculous subjects in addition to those already tagged by the veterinarian at the header's table, being guided by the appearance of the lesions in the liver, spleen, lungs or visceral glands.

Another inspector has recently been installed and he is stationed at the point on the line where the carcasses are split, it having been found that occasionally vertebral lesions and lesions of the serous membranes will exist, even when the visceral organs are apparently normal. Returning to the hogs tagged by the inspector on the heading bench, they are passed along to the retaining room, where they are eviscerated by a separate lot of butchers, using separate tools, under the supervision of a fourth veterinary inspector. By this method the affected parts or tissues are prevented from coming in contact with the healthy meats and are passed directly from the retaining room to either the condemned room or to the offal tanks, together with the condemned carcasses. In the retaining room by this time there will be many hogs on the rail that are only slightly affected with tuberculosis, and these are now beheaded, split, trimmed and passed on the cooling rooms.

It is not a very difficult problem to pass judgment on the carcass of a hog affected with tuberculosis when the lesions are slight or when they are widespread. Most sanitarians are agreed in their opinion to pass the former class for food after removing the diseased parts and of condemning the latter class. In the great majority of hogs with lesions in the submaxillary, bronchial and hepatic lymph glands, or any combination of them, in which the foci are of the same character, size and consistence, and apparently of the same age, and in these cases it is not difficult to consider the animals infected by a limited exposure with

resulting lesions in these various glands. Indeed, by experiments performed by the bureau, where hogs were fed for two feedings on cultures of tubercle bacilli it was observed that apparently some of the tubercle bacilli entered the submaxillary glands, while others lodged in the bronchial and hepatic glands at about the same time. These are purely primary lymphatic invasions, and these are the cases in which it is customary for the inspector to remove all diseased parts from the carcass and allow the remainder to be passed as suitable for food. The principle governing such disposition of this class of carcasses is that there being no evidence that the tubercle bacilli have been taken up from the portal of entry to the body by the blood vessels there could have been no scattering of such organisms through the muscular parts of the carcass, and these may therefore be eaten with impunity. It is in cases of this class that danger from the development of tuberculin has been suggested. This, however, has been disproved by the experiments of Eber and ourselves.

The disposition of cases of generalized tuberculosis is also an easy matter, for it is evident that the infectious organisms have gained entrance to the blood vessels, and by this means have been conveyed to all parts of the carcass, infecting the meat more or less completely. The rendering of such carcasses in the offal tank is the only rational disposition that can be made of them. There are other cases in which the development of disease has reached a stage which may admit some discussion as to the advisability of using the meat for food. Many tuberculous hogs are found that give no evidence of cachexia or wasting and that show on examination that the disease has not become generalized or extensive, although it has advanced beyond the point of primary glandular infection. Here the inspector must act carefully, trying to avoid the waste or loss of any meats that may be safely converted into human food, and at the same time being sure that nothing of a dangerous character is allowed to enter the cooling or cutting rooms. If the lesions of tuberculosis in the animal under his consideration are so located that they be readily removed, a third method of disposing of the carcass may

be selected. The carcass may be carefully trimmed, the tuberculous parts being consigned to the offal tank, while the trimmed meat, comprising the bulk of the edible portions of the animal, is placed in the lard rendering tank, where it must be cooked by means of steam at a temperature not lower than 220 degrees Fahrenheit for not less than four hours for the extraction of the lard which it contains.

PREVENTIVE MEASURES.

The first step to be taken in preventing further spread of the disease is to remove all affected animals, whether hogs or cattle, from the premises, as these will only serve as sources of infection so long as they are allowed to mingle with healthy animals. In dealing with affected herds of cattle it has been found best in most cases to apply the tuberculin test to the entire herd as a means of selecting the tuberculous animals, but with a drove of hogs in which tuberculosis has appeared there can be no doubt that the best and surest method of procedure will in nearly every case be found in the slaughter of the entire drove as soon as they can be put in a marketable condition. This means of removing from the farm all of the centers of infection which exist among its swine is made possible and practicable by the ease with which a new drove may be built up from fresh foundation stock. With cattle the offspring seldom number more than one per cow per year, and the young cow does not produce until two years of age. With swine reproduction may be expected when the gilt is one year old, and instead of producing but one young at birth, from six to ten may reasonably be expected. If properly handled the first litter of young may be weaned in time to allow the sow to farrow again the same year. This shows how very rapidly a farm may be stocked with healthy swine after the total slaughter of a tuberculous lot. The early age at which the young sow may be bred, her capacity for breeding twice per year and the plural number of her offspring are forceful arguments for the total destruction of every diseased drove of hogs, and the breeding up in clean, healthy quarters, of course, of a sound, healthy drove in its stead.

As tuberculosis seldom attacks the swine of a farm except through tuberculous cattle, the tuberculin test should be applied to all of the cattle on the place, and all tuberculous animals among them should be destroyed at the time of disposing of the hogs.

With the hogs all removed from the place and no tuberculous cattle remaining attention should next be given to disinfecting the premises, that no center of infection may be left to contaminate future purchases of live stock. The disinfection of pens and stables may be accomplished by thoroughly cleaning them, scrubbing the floors with hot water, brushing down all loose dust from the walls and tearing out all woodwork which has become partly decayed. The interior of the pens or stables should then be carefully covered with a coating of lime wash containing 1 part of formalin to 30 parts of the lime wash, or 4 ounces of formalin to each gallon of the lime preparation. The yards should be carefully cleaned at the same time, especial attention being given to the removal of all rubbish and litter from the dark, shady corners. Lime may then be sprinkled upon these dark portions of the yards, or a 3 per cent. solution of carbolic acid may be used instead. In all of the open portions of the yard the action of the direct rays from the sun will very quickly destroy all of the virulence of the scattered tubercle bacilli.

The premises now being cleaned healthy foundation stock may be procured, and if proper attention is given to keeping the cattle of the farm free from tuberculosis, and to supplying the hogs with suitable food, the owner may feel every reasonable assurance that he has seen the last of tuberculosis among his swine. The trouble, time and expense required will be more than repaid by the advantages gained. In case the disease has only recently been introduced among the hogs it would be advisable to apply the tuberculin test that the affection may be detected in the early stages in order that the hog raiser may clean up his herd with as little loss as possible.

The heating of all milk when received at public creameries to 176 degrees Fahrenheit or to 80 degrees C. has been found

most effective in preventing the spread of tuberculosis to the animals consuming the by-products of such creameries. Denmark was one of the pioneers in this movement, having in 1898 passed a law requiring all skimmed milk and all buttermilk to be warmed to 185 degrees Fahrenheit before it could be distributed from any creamery to its patrons for feeding purposes. It was found, however, that this degree of heat was harmful to the product, and in 1904 the required temperature was reduced to 176 degrees Fahrenheit, experiments having proved that no tubercle bacilli could withstand such application. In practically all of the Danish creameries from this latter date the whole milk has been heated to the required point, thus assuring butter that is free from tubercular organisms as well as by-products that are safe for use in feeding hogs or calves. The result of these regulations has been most satisfactory. The spread of tuberculosis to farms previously free, through the skimmed milk or the buttermilk from creameries, has been very markedly checked, and suppression of the disease in hogs has been plainly noticeable. Treating of creamery milk as a cause of the spread of tuberculosis among hogs Moussou makes the statement that sterilization of the by-products of creameries and cheese factories results in the disappearance of tuberculosis of an alimentary origin among hogs fed with them, and the hog owners do no longer fear losses from this disease.

Borgeaud has cited an instance in which a serious outbreak of tuberculosis among hogs was overcome by boiling all of the separated milk before feeding it to the subsequent litters of young pigs.

While pamphlets, popular articles and public notices would be extremely useful in eradicating tuberculosis in swine, it would probably be more satisfactory to explain the methods to be followed by the hog raiser by word of mouth. As this suppression of tuberculosis is entirely voluntary on his part, a powerful propaganda is of the greatest value, and the veterinarian is the best equipped man available for the work. The state should also assist by employing veterinarians to give public lectures in towns

and townships, as is being done at present in Sweden. We now have absolute knowledge that the vast majority of cases of hog tuberculosis are produced by

- (1) Raw milk and slime from creameries.
- (2) Hand-separated milk from tuberculous cattle.
- (3) Feeding behind tuberculous cattle.
- (4) Feeding tuberculous carcasses.
- (5) Feeding slaughter house offal.

It therefore behooves us as veterinarians to educate our clients as to the proper methods of preventing this disease as we would recommend a proper feeding ration or proper construction of a stable. Inform our clients to (1) scald all raw products returned from the creamery; (2) to test their cattle if a hand separator is used on the farms, or in the absence of such a test, to scald the skimmed milk; (3) to feed only behind cattle that have not reacted to the tuberculin test; (4) to feed carcasses of animals that have died from any cause and offal from the slaughter house only after the meat and offal have been thoroughly cooked.

Sooner or later the packer and slaughterer are going to buy hogs subject to the post-mortem inspection, as they are at present doing in some of the large packing centers with certain classes of female cattle, and the hog raiser who in face of the advice obtained from his veterinarian, his stock papers, or elsewhere, continues to fatten his hogs as of old should be made to sustain the losses arising from his lack of knowledge, skepticism or indifference, and not the innocent purchaser who cannot be familiar with methods of feeding in vogue on the farms of the different breeders. Nor should the intelligent hog raiser who produces healthy hogs by carrying out minutely the known and proved methods of prevention be obliged to bear a portion of the burden of the careless or ignorant hog raiser as at present. To-day the hog buyer must make his purchases with the absolute knowledge that a certain proportion of his purchase will be condemned for tuberculosis, and as the post-mortem examination is the only key to the extent of the disease, the careful breeder must

suffer equally with the careless one. This is not equitable. When the packer buys subject to the post-mortem results the intelligent hog raiser will get more for his healthy hogs than now, and the ignorant breeder less for his tuberculosis hogs, as it should be. It would be money well expended if butchers and packers who are losing so much from hog tuberculosis would employ veterinarians in their vicinity to write popular articles, giving correct views on how to suppress tuberculosis on the farm, and mail them to their hog shippers and hog raisers in furtherance of this plan of eradication. Extermination of hog tuberculosis is practicable, relatively easy, and should be attained without delay, before the disease has gained too much headway.

One of the favorable steps in this direction and one that will undoubtedly tend to check the advance of tuberculosis is the enactment of the following laws by the States of Iowa and Minnesota:

Laws of the Thirty-first General Assembly of the State of Iowa (1906).

Be it enacted by the General Assembly of the State of Iowa:

Section 1.—That every owner, manager or operator of a creamery shall, before delivering to any person any skimmed milk, cause the same to be pasteurized at a temperature of at least one hundred and eighty-five (185) degrees Fahrenheit.

Section 2.—Whoever violates the provisions of this Act shall, upon conviction, be liable to a fine of not less than twenty-five (25) dollars, nor more than one hundred (100) dollars.

General laws of Minnesota for 1903 to prohibit and prevent the manufacture or sale of unhealthy or adulterated dairy products.

Be it enacted by the Legislature of the State of Minnesota:

Section 10.—That all creameries, before delivering to any patron any skimmed or separated milk, shall have pasteurized the same at a temperature of at least 180 degrees Fahrenheit.

Similar laws to the above are at present being considered for Wisconsin and Illinois but have not as yet been enacted.

FUTURE WORK IN ERADICATING TUBERCULOSIS.

BY A. D. MELVIN, M. D. C., CHIEF OF BUREAU OF ANIMAL INDUSTRY,
WASHINGTON, D. C.

Presented to 44th Annual Meeting of the American Veterinary Medical Association, at Kansas City, Mo., Sept. 10-13, 1907.

So much has been written upon the subject of the eradication of tuberculosis for so many years that it may seem superfluous to say anything further before this body, but the fact remains that although much has been said and much work has been done, this disease is, without doubt, upon the increase.

The great agitation which has been going on for some time regarding meat and milk inspection has brought this question of tuberculosis before the public in a more direct manner than ever before, and it occupies an important position in the minds of all reasoning people. Never, therefore, has the time seemed so favorable for securing the endorsement of the people in carrying on the work of eradication. In an important movement of this sort it is imperative that it be sustained by the endorsement of the public, for without such endorsement those who are selfishly interested generally place so many obstacles in the way as to successfully frustrate any effort in that direction. Without becoming alarmists to an unnecessary degree, it is the duty of the profession to keep this matter before the public in such a way that the public may become familiar with the subject and understand the importance of eradication from both an economic and health standpoint.

The reports of the Bureau of Animal Industry indicate that this disease is steadily increasing, as shown by the number of animals found affected at the various slaughtering centers. The increase in the number of cases found is due in part to the increased efficiency of the method of inspection, but only in part. For the fiscal year ending June 30, 1903, the percentage of tuberculosis found in cattle at abattoirs was 0.169; in 1904, 0.203;

in 1905, 0.226; in 1906, 0.259, and in 1907, 0.363; for the months of January, February and March, 1907, the percentage was 0.434, and for the months of April, May, June, 1907, the percentage was 0.539. Thus, during a period of five years the increase in cases found upon post-mortem examination has been from 0.169 to 0.539, which surely is an alarming state of affairs. The various recent articles showing the ease with which this disease can apparently be conveyed from cattle to man has awakened the interest of the medical profession and it is now ready to support any movement looking to the eradication of the disease. The very general impression throughout the medical profession until recent years that this disease was conveyed principally through the medium of dust and by inhalation failed to interest that profession in any movement looking toward the eradication of tuberculosis from live stock.

Without considering the matter as a public health question, but looking at it entirely from an economic standpoint and as a business proposition, live stock raisers cannot afford to have this disease in their herds. As an illustration, Argentina requires that all cattle imported into that country be subjected to the tuberculin test upon arrival, and as a consequence exporters from the United States had the test made of all cattle intended for shipment. The results of these tests show that in some of the full-blooded herds nearly fifty per cent. of the animals reacted, and in consequence that many sales were lost.

When the practice becomes general for all buyers of breeding cattle to have the same tested before placing them in their herds the breeder of strictly healthy cattle will then be much sought after. Already some breeders of full-blooded cattle have established or are arranging to establish such free herds.

Considerable tuberculin testing of cattle has been done in Washington, D. C., and vicinity, for the purpose of assisting the District authorities in obtaining a pure milk supply and of obtaining for the bureau further information regarding the extent of tuberculosis in that locality, and for other purposes. The

tests conducted by the bureau showed over eighteen per cent. of the cattle reacting. The percentage of tuberculosis in various States, shown by tests conducted by the officials of those States with bureau tuberculin, indicate from 2.79 per cent. to 19.69 per cent. of the cows reacting and slaughtered as being tuberculous. It should be stated, however, that in all probability the majority of these tests were made in herds where the disease was thought to exist and that on that account the percentage may be higher than it would be if all of the cows of a certain section were tested.

In various sections where an effort has been made to secure a wholesome milk supply, many dairymen have been found ready of their own accord to assist in the work of eradication. Many others would do so with some small financial assistance, and others would necessarily have to be forced to submit their cattle for examination. As the eradication of the disease in such cases is undertaken as a public health measure it would seem reasonable that the States should assist in recompensing, at least in part, the dairymen whose cattle are slaughtered. Many of these dairies consist of highly bred cattle, and it has been and will be necessary to employ the Bang method, in addition to the slaughter of the reacting animals.

The following is a form of agreement prepared by the bureau and required as the consideration for testing the herd:

UNITED STATES DEPARTMENT OF AGRICULTURE.

BUREAU OF ANIMAL INDUSTRY.

Agreement.

IN CONSIDERATION of the testing of my herd of dairy cattle by the Bureau of Animal Industry of the United States Department of Agriculture, and the assistance of said Bureau in enabling me to produce milk free from the contamination of disease germs, I,, owner of dairy herd, do hereby agree as follows:

1. I will cause all animals that react to the tuberculin test, and which also show other symptoms of tuberculosis, to be slaughtered within a reasonable time under United States meat inspection, and I will cause the carcasses of said animals to be disposed of according to the meat-inspection regulations of the Bureau of Animal Industry, based upon the lesions found upon inspection. ..

2. I will cause all animals that react to the tuberculin test, but which show no other evidence of tuberculosis, either to be slaughtered and disposed

of as herein provided for animals which show also other evidence of tuberculosis, or I will cause such animals to be removed from the dairy farm upon which the healthy animals of the herd are maintained, and I will cause the diseased animals to be segregated from the healthy animals, and thereafter they shall remain so segregated.

3. In all cases where the milk from such segregated reacting animals is to be used for any purpose whatever I will cause the said milk to be sterilized.

4. I will cause the young from said segregated reacting animals to be removed from their mothers at birth, and will not permit the said young to suckle their mothers.

5. Any part of my premises contaminated by reacting animals will be submitted by me to a thorough disinfection under the direction or supervision of the Bureau of Animal Industry.

6. All cows owned by me—both healthy and tuberculous—I will mark in such manner as to enable their identity to be retained, and I will change the location of no cows except after due and timely notification to the Bureau of Animal Industry.

7. I will add no cattle to the said herd which have not passed a tuberculin test administered by an authorized agent of the Department of Health of the District of Columbia or by an agent of the Bureau of Animal Industry.

8. I will comply with all reasonable sanitary measures which are indicated by the Department of Health of the District of Columbia or by the Bureau of Animal Industry.

IN WITNESS WHEREOF I have signed this agreement this..... day of, one thousand nine hundred and seven.

.....
Owner of the Dairy Herd.

(Address)
.....

Witness:

.....

The recent effort of the large packing interests to buy all dairy cows subject to post-mortem inspection shows how serious the plague is becoming. Sooner or later the one who raises those diseased animals must suffer the loss, unless the loss is paid for out of public funds, and when he does you may then know that the end of the disease is in sight.

As before stated, no progressive stock raiser, and in fact no stock raiser, whether progressive or not, can afford to go on breeding cattle while this disease exists in his herd. As soon as this fact is fully understood much of the objection raised against

the sale of live stock subject to inspection will disappear, for it would be worth the price of several condemned animals for the owner of a valuable herd to know as early as possible when the disease exists in his herd, as the longer he delays in taking steps to prevent its spread the greater will be his loss eventually.

Some years ago the Bureau of Animal Industry, in order to protect, as far as possible, the breeders of cattle from the danger of this disease, issued an order requiring all cattle imported for breeding purposes to be subjected to the tuberculin test. The wisdom of this step can be shown by merely stating that 19.7 per cent. of the cattle tested since that time have reacted, and that from several foreign herds no cattle are even considered for testing on account of the general infection existing in those herds. Unless some steps are taken soon to eradicate the disease will not the same conditions exist in this country within a few years, if they do not already obtain in some instances?

The bureau has recently undertaken to ascertain the origin of all tuberculous cattle slaughtered at establishments where inspection is maintained and in such instances to inform the State authorities of the facts. The information thus obtained is transmitted to the authorities of the various States, and it is hoped that it will be used in endeavoring to locate the centers where infection exists and to eradicate the disease. When a system of co-operation can be effected between the State and Federal Governments providing for a general plan of tagging all dairy cows shipped to market centers for slaughter, then the work of locating these disease centers will be greatly simplified. Had the packers been successful in their recent efforts to buy all such cattle subject to inspection such a system of tagging would have been necessary in order that the identity of the animal could have been retained.

It may at some time be necessary for the Federal Government to quarantine against the interstate shipment of cows from certain States where the disease prevails to a considerable extent and require a strict supervision over all animals removed from such States for interstate shipment, and only remove the quaran-

tine from sections of a State when it has been demonstrated that the disease has been either eradicated or is under strict local quarantine.

The recent agitation against the milk of tuberculous cows as human food has had the effect of causing many herds to be examined with astonishing results to not only the owners but to the officials themselves. Can it be wondered at that so many infants and children die of intestinal tuberculosis when so many of the cows from which the milk is obtained are tuberculous?

Recent feeding experiments conducted by the bureau have proved conclusively that hogs are readily infected through the ingestion of fæces and of milk from tuberculous cows. The percentage of all cases of tuberculosis of all the hogs slaughtered under inspection for the fiscal year ending June 30, 1907, amounts to 1.43. There is no doubt in my mind that this percentage will be reduced to a negligible quantity as soon as the disease is eradicated from cattle. There has been considerable incredulity with reference to the tuberculin test, particularly among those opposed to the movement to stamp out the disease, but the statements of such persons should not be given very serious consideration except as they may be the means of prejudicing the uninformed against the tests. There is no more reliable diagnostic agent than properly prepared tuberculin in the hands of the careful observer. The reports received by the bureau from State officials from all parts of the United States of tests made by competent veterinarians absolutely confirm this statement. Frequently affected animals give little or no reaction, or a subnormal temperature, but in these latter cases any veterinarian of average ability should be able to diagnose the disease by physical examination alone, as in nearly all such cases the disease has become so generalized that a mistake should not be possible. It is understood, of course, that tuberculin should be administered by a reliable veterinarian and that in addition to the test a physical examination should be made of the cattle. A compilation of these many tests is now being made with a view to publishing the report.

That impotent commercial tuberculin has been on the market is a fact which was demonstrated by the bureau, and at its request Congress gave to it authority to make tests of tuberculin, vaccines and similar products, and to publish results. Such tests are now being made, and if any inferior agents are found public notice of that fact will be given. The use of this worthless tuberculin may to some degree have been the means of prejudicing some practitioners and others against the use of any tuberculin.

In my opinion the time is very near at hand when our profession will be face to face with the problem of eradicating this plague from the herds of the country. It therefore stands us all in hand to give the subject our most careful thought and consideration. It means the expenditure of millions of dollars of public money and a great financial loss to individuals. I again repeat that in a movement of this magnitude it is necessary to have the support of the public and of the live stock owners in general in order to meet with success; and the principal object of this paper is to place before you the importance of informing stock owners and others of the great dangers from tuberculosis both from an economic and health point of view.

CONSERVING HORSE POWER.—The time and energy expended by horses in going to and from their daily work in New York sometimes represent an enormous waste, measured in dollars and cents. William Bradley came to this conclusion a short time ago after figuring on the total distance that his teams would have to travel in the next few months between their stables at the foot of West Sixty-eighth street and their work on the new bridge loop subway down on the lower East Side. Ten minutes with a pencil and paper convinced the well-known contractor that he could better afford to buy a block of land and establish new stables near the work than to have all his horses wearing themselves out by walking about ten miles uselessly every day. He estimated that the distance travelled would aggregate something like 19,000 miles. He accordingly purchased outright a whole block in Stanton street, running through toward the East river, and now has his entire subway loop plant concentrated there.—(*New York Herald.*)

THE ANIMAL TUBERCULOSIS PROBLEM.

BY DR. BURTON ROGERS, MANHATTAN, KANSAS.

Every phase of tuberculosis has been the special study of the writer for many years, and he has taken active interest in methods for its most economic, rapid and satisfactory eradication from the food animals. There is proposed herein a plan which the writer has had for quite a long time, and it is hoped the idea started will be subject to such improvements in the minds of those who read it that their suggestions will result in the general plan being immediately attempted.

The farmers of several states, particularly in Iowa, in 1898, cast their bread upon the water and it has returned, when they attempted to block any legislation suggested by the veterinary profession for its eradication in animals.

Ninety per cent. of the farmers of this country are needlessly biting off their own heads when they bring political influence to bear against wise and commendable legislation.

From a personal experiment in a certain district of tagging 3,430 hogs brought to market in 626 different wagons, and killing the animals later, I found that only 39 different farmers had brought in tuberculous hogs. This having been in an especially bad district, I believe a conservative estimate, taking the country as a whole, would be that less than 6 per cent. of the farmers in the United States are sending all the tuberculosis food animals to market, causing 100 per cent. of the farmers, 100 per cent. of the packers and 100 per cent. of the consumers to suffer in varying proportions. From more viewpoints than one it is to the positive interest of the 94 per cent. who do not now have tuberculosis upon their premises to ascertain whether they are one of the 94 per cent., and if so, to even go farther and see that it is eradicated entirely from the 6 per cent.

If we are not careful we will some day awaken to the fact that the newly-developing countries of South America, starting

rightly as an advantage, will soon eradicate tuberculosis from their herds, and then possibly set up a justified European scare against our dairy products not coming from animals known to be free from tuberculosis.

The bulk of cattle condemned by federal meat inspectors are cows affected with tuberculosis, and some of these up to periods of fifteen years have been supplying milk in a raw state to the consumer, and these cows have been continuing the disease to others, and to hogs and to chickens *ad infinitum*. Now, that is true scandal. The concentrated carefulness and government jurisdiction of packing houses will make our meat products good, wholesome, and perfect, in spite of and in the face of the *scattered* carelessness and indifference, neglect and heedlessness of our farmers, but it will not make the products of over 5,000,000 cows good and sanitary and wholesome. The tuberculosis cow is not handicapped one iota in competition with the healthy cow. She and other species are "gold bricks."

It is the American farmer, as well as the American packer, who should certainly be responsible for and who can make the reputation of American meats and dairy produce.

Ultimately it would be a profitable financial investment for this nation, in proportionate conjunction with the several states as they have been neglectful, to cause every cow in the land to be tested for tuberculosis, and wherever found, the remaining animals on the same premises likewise tested, and then send them down to Southwestern Government land reservations, divided up according to the several states, and there be placed under favorable therapeutic conditions, the animals to be bought either at full value or at a discount from a pooled fund from the federal, state and county governments and the packer.

But, better still, I firmly believe if the Government and the farmers would do their part faithfully that the packers would be willing to suffer the entire loss from the condemnations of the animals that are now tuberculous. If the 6 per cent. of the farms which now have all the tuberculosis animals upon them could be ascertained, I am sure the packers would be willing to

buy outright every one of the food animals on these farms at full market values and without one cent of loss to the farmer. These are the animals that are giving and transmitting the disease to those that will be marketed in the years to come. The only cost to the farmer will be that of properly disinfecting his premises in an approved manner, and he should be glad to do that. The only cost to the Government would be the testing of the remaining animals on farms which are known to have had tuberculosis animals upon them. And really the packer will not lose a single penny, for all the tuberculous animals living now, unless they die or are killed beforehand, will ultimately reach the open market, where he will buy them unconsciously and with exactly the same loss. Indeed, if bought now the disease may not be advanced to the stage that would cause its condemnation by the inspectors in a few months more time. One thing sure, the disease would be practically eradicated, and they will have prevented the losses of to-morrow.

So, evidently, the whole problem is one of discovering where the tuberculosis animals are at present located, and that is the object of this article and the following crude forms of resolutions which I am sure and hope the readers will try to improve.

The tags should be made in the form of a fraction, each county in the state being given a number, and that be the numerator, and each live stock owner in each county be given a number, which will be the denominator of the fraction. A letter for each state.

All readers will understand the following resolutions have never been made, but are simply a proposed set.

"WHEREAS, We, the packers, are suffering immense loss and risk of losses from the condemnation of food animals in order to fulfill the requirements of the meat inspection act of June, 1906, and without criticism of that act,

"Whereas, We believe this combined effort on our part is in behalf of the common good, we, the packers, do hereby resolve:

"That, We agree to bear the expense of having prepared a sufficient number of recognition tags of a type approved by the

U. S. Department of Agriculture, or the Kansas State Experiment Station, providing the farmers of the state of Kansas adhere to their resolutions of (date) and apply the tags to all live stock, except range cattle, sent to market prior to December 31, 1909, and to all cows and bulls sent to market prior to December 31, 1912.

"That upon the discovery of tuberculosis by the U. S. inspectors in any animal slaughtered in our packing houses, that can be traced by the tag number to the owner, the packer and the owner only shall be notified of that fact by the government.

"That the owner of such animals shall be required to allow all susceptible food animals upon his premises to be tested for tuberculosis with tuberculin by methods recognized by the U. S. Department of Agriculture or the Kansas Experiment Station, unless he would prefer to sell every animal to the packer without having the test made.

"That we, the packers, agree to pay the full market value for all the animals which react to the tuberculin test, or for all the animals on the premises, provided as per their resolution of (date), the farmers will immediately separate the healthy from the reacting ones, and not allow them to come in contact with healthy animals except during shipment, and will make all efforts at their expense to disinfect their premises in a manner the U. S. Department of Agriculture or Kansas Experiment Station deems necessary to prevent the spread of the disease from the source to additional animals.

"That we, the packers, will bear the loss from the condemnation of tubercular animals coming from the state of Kansas, in the following proportion based on the losses each packer suffered for the same cause during the previous year. In the form of a fraction let the denominator represent the total losses for the previous year by all the packers, and the numerator equal the loss by each packer for the same period. Reduce to a common fraction that will apportion the losses from condemned animals coming from Kansas during the period of the experiment.

"That the federal and state governments should bear the expense of the testing and necessary record keeping.

"That the state and federal governments should give the necessary legal aid to assist in demonstrating the success or failure of the experiment.

"That we do not choose Kansas with any belief that she has a greater amount of the disease than any other state. In fact, we believe she has less than the principal ones.

"That we firmly believe the disease can be practically eradicated within a period of five years if such a course as these resolutions indicate be adopted."

The following are proposed resolutions which it is hoped the farmers will make:

"Whereas, We, the farmers of the state of Kansas, realize that tuberculosis of the food animals is prevalent throughout the civilized world,

"Whereas, We believe on good authority that there is less percentage in the United States than in any other country in the world, thus making it an easier problem to deal with;

"Whereas, We sincerely believe less than 6% of the farmers of the entire country are owning and marketing all the tuberculous animals, the remaining 94% being absolutely innocent;

"Whereas, We believe the disease to be one which will steadily increase unless there is some intervention, each succeeding year, therefore making the problem more difficult;

"Whereas, We believe the disease cannot be recognized in the live animal except by application of the tuberculin test;

"Whereas, We believe the disease communicable and preventable;

"Whereas, We are solicitous regarding the possibilities of ourselves and family becoming affected with the disease from our cattle in a manner similar to the way our hogs acquire the disease;

"Whereas, We are sincerely desirous that our entire live stock shall become a meat product of the highest quality without the economic destruction which the meat inspection service now shows to be necessary;

"Whereas, We are desirous of eliminating the risk of immense losses from condemnations which the packers now suffer in buying on the open market, and really reacting against us;

"Whereas, We believe in offering for sale only what we can guarantee and thus give a 'square deal';

"Whereas, We know a large quantity of feed and labor is expended on animals that never reach the economic purpose and value intended;

"Whereas, We believe that co-operation instead of conflict and antagonism between the packers and live stock owners will be found to be the most rapid, economic and certainly most commendable method to adopt for its eradication;

"Whereas, We believe the state of Kansas to have at present as small a percentage of tuberculosis as any of the middle states, and less than the eastern;

"Whereas, We feel the state of Kansas to be as progressive as any state in the Union and can, therefore, be a pioneer in inaugurating a method, the success of which seems at present so promising that an example will be set to the other states:

"Whereas, The packers slaughtering animals coming from the state of Kansas have agreed to pay full market value for all tubercular animals until December 31, 1909, under all the conditions stated in these resolutions and their resolutions of (date);

"We, the farmers and live stock owners of the state of Kansas do hereby resolve,

"That, providing the aforesaid packers furnish the proper tags, we hereby agree to properly and securely tag in the left ear all food animals which we send to market prior to December 31, 1909;

" That the United States Department of Agriculture should conduct the work of distributing the tags to the farmers which the packers furnish, and keep all records necessary ;

" That the United States Postoffice Department should authorize the Department of Agriculture to forward these tags to the farmers by mail without cost ;

" That we will forward the U. S. Department of Agriculture as accurate an estimate as is consistent of how many of each species of food animals we will market in the six months ;

" That in case the government inspectors find one or more of the animals belonging to an individual to be tuberculous at time of slaughter, that individual agrees to allow every susceptible animal he owns or which is on his place to be tested for tuberculosis with tuberculin by methods approved of by the government and state experiment station ;

" That every animal found to be tuberculosis will be immediately separated and not allowed to come in contact with healthy animals, and the reacting animals will be sold immediately to the packers at a price a similar animal in a healthy condition would bring, allowing, however, the feeder to finish the animals if he desires.

" That in case tuberculosis shall be found in a pure bred and high type of animal it is desired and believed it will be more economical to retain and transmit his other good qualities, this animal can be retained under conditions laid down by the government that are believed will not transmit the disease to additional animals ;

" That the owner will not sell the reacting animals except to the packer ;

" That immediately after the removal of the tuberculous animals the premises will be disinfected at the owner's expense in a manner which the government and the state experiment station shall deem sufficient to prevent the spread of the disease ;

" That within one year all the susceptible animals will be allowed to be retested, and all reacting ones treated as above ;

"That Congress and the State Legislature of Kansas should appropriate sufficient money to pay for the testing and for part of the record expense:

Dr. BURTON ROGERS,

Manhattan, Kansas:

I approve of the plan which you propose for the eradication of tuberculosis, but would make the following criticisms and suggestions.

Signed,

Fold here and cut; paste on both sides of card.

POST CARD.

One cent
stamp.

Dr. BURTON ROGERS,

Kansas State College,

Manhattan, Kans.

THE NEW YORK STATE VETERINARY COLLEGE reports a freshman class of 35 and an entire attendance of 77.

"I DO NOT SEE how any practitioner can afford to be without the REVIEW. You are more than entitled to the financial support of every veterinarian in the United States."—[S. H. Saul, V. S., Memphis, Tenn.]

"I HEARTILY COMMEND you for your efforts to make the REVIEW of the highest quality and I congratulate you upon your success in making it increasingly interesting and instructive."—[C. C. Mills, V. S., Decatur, Ill.]

IF THE MOUNTAIN WILL NOT GO TO MOHAMMED, MOHAMMED MUST COME TO THE MOUNTAIN.—A postscriptum to a letter from Dr. W. T. Monsarrat, dated at Honolulu, September 27, says: "Mrs. M. and myself have almost made up our minds to come on to the next meeting of the A. V. M. A." Good.

A PET ANIMAL'S CEMETERY has been established at Akron, Ohio, by Veterinarian Joseph Wingerter, who has set aside a number of acres of land for that purpose, which has been neatly enclosed. Any animal, from a canary bird to a horse, may be buried therein upon payment of a fee. Animals to be disposed of may be sent to Dr. Wingerter, who will destroy them and have them properly buried.

HITCHING IN HORSES.

By F. C. GRENSIDE, V. S., NEW YORK CITY.

Read before Veterinary Medical Association of New York City, Oct. 2, 1907.

In the April number of this year's AMERICAN VETERINARY REVIEW reference is made to the subject of "Hitching in Horses," by Dr. Dougherty, of Baltimore, Md. He states that the "hitching" horse is quite a common one, but that he has never found any one that could give a plausible reason for it. I have never seen anything written upon the subject except what I have contributed myself, consequently I think it is a proper one to bring before this meeting. Dr. Dougherty implies in the article referred to that this peculiarity of gait is due to one hind leg being shorter than the other, which theory my study of the subject does not allow me to subscribe to.

The "hitching" horse is not necessarily unsound or deformed, which we will endeavor to show, but it is one of the defects of action that horses exhibit which detracts very much from the gracefulness of movement in the trot and walk. It is a peculiar irregularity of the gait or hopping movement which results from lack of power or defective balance. It is said that "good cooks are born not made." Exactly the opposite in the case with "hitchers." They are made, not born, although there is no doubt that some colts are foaled with a predisposition to it, yet it may be kept in abeyance by good handling. The causes of "hitching" then may be said to be predisposing and exciting. Of the predisposing ones the most prolific is the lack of power and freedom of movement in the hind quarters. Cat-hammed horses, those with short hind quarters, and those that stand with their hocks too far behind them, are very liable to this defect of action. Among the exciting causes bad driving is one that frequently contributes to this fault. Some drivers will make almost every young horse they handle get into the habit, for it becomes almost a habit in some individuals. Starting off at too fast a

pace, urging a horse beyond his speed, particularly if he has a heavy vehicle behind him, and allowing him to go uncollectedly from driving with a loose rein are causes. Drivers that allow horses to rattle along with their heads loose, particularly if they are inclined to be free, will make many "hitchers," especially among young horses, and in those in which there is a predisposition to the fault. A driver or rider with bad hands is also apt to make a horse "hitch." Such a driver either takes a heavy, unyielding grip of the reins or else holds them unsteadily, which in either case is apt to put a horse off his balance.

Some drivers pride themselves on having light hands, that drive with loose reins, which is really not driving at all. A good driver always feels his horse's mouth, keeping him collected by exerting steady tension on the reins, but doing so with as light a hand as circumstances will permit. In addition to the causes already discussed and really the most important of all is the mouth, for a very large percentage of "hitching" is referable to that organ.

Horses which carry their heads steadily, hold them straight, with no crossing of the jaws or opening of the mouth, and which keep their tongues in position under the bit and have responsive but firm mouths, never "hitch" with anything like proper handling. Any discomfort of the mouth caused by bruises, abrasions or excoriations, making a horse side-line or bore, is very apt in the case of a very prompt horse to cause "hitching."

On the other hand, horses that do not face the bit firmly on account of soreness of the mouth or from the bit being too low in the mouth or from excessive natural sensitiveness of this organ, not uncommon among well-bred horses, from lack of courage or any cause that makes them go with unsteady heads.

Horses that draw their tongues up in their mouths when the pressure of the bit comes on them, allowing it to come in contact with the gums, and those that put their tongues over the bit, are very apt to carry unsteady heads and consequently to "hitch."

Horses that have not been properly bitted, or from anatomical defect are unable to bend their heads upon their necks, a horse that goes with his nose stuck out when tension is exerted upon the reins, the bit is pulled up in his mouth, forcing his cheeks against the anterior molars, and if there are sharp projections on them excoriations of the lining membrane of the cheeks result, causing soreness, which either makes a horse bear unduly on the bit or else carry his head unsteadily, in either case putting him off his balance.

Injuries to the tongue are also causes. Cicatrices on the tongue at the seat of pressure of the bit are a fruitful source of unsteady heads and consequent "hitching."

Reference has been made to the bit being placed too low in the mouth, as a cause, and here the importance of this point may be emphasized. I have frequently seen a horse "hitch" from the bit being placed so low in his mouth that he could not carry his head steadily, and by raising it a hole or two it made him comfortable and he would face it firmly and move with regularity. On the other hand, the bit being placed too high in the mouth will cause "boring" and "side-lining," in some cases with the same result, so that it is very important to find the proper position to place the bit in an individual so as to make him comfortable, which will be evidenced by his carrying his head in proper position, steadily and being balanced.

A tight-bearing rein will sometimes make a horse "hitch," and in another checking up will stop him. The character of the bit as well as its position in the mouth has much to do in contributing to a horse's comfort and proper way of going. Individuals differ in the kind of bit they require.

We have frequently referred to a horse being put off his balance, causing the irregularity of the gait we call "hitching." What is balance? A horse may be said to be balanced when every leg bears its proper proportion of weight and exerts its share of propulsion. Anything that interferes with this causes irregularity of the gait. The uninitiated are apt to mistake

"hitching" for lameness, and it is very hard to persuade them to the contrary, especially if a horse keeps doing it persistently. This is one of the interesting points of this question to the practitioner whether he is acting in the show ring, examining for soundness or disillusioning a client who is certain he has a lame horse when in reality he only has one that is "hitching."

The crucial test of course is jogging in hand. If a horse will jog out sound and with regularity when his head is free he cannot be considered a lame horse no matter how he goes in harness.

I have had some interesting experiences with "hitchers" and will take the liberty of narrating one instance in which I was a victim of circumstances. A patron of a riding club bought a thoroughbred mare for his daughter to ride, subject to my examination. I passed the mare and the purchase was consummated. In a day or so I was called up by the new owner asking me to look at the mare I had recently examined for him as she was going lame off hind. I went and had her jogged on the halter and found her going sound. The foreman of the stable who was looking on said to me: "This mare was certainly lame last night in the ring for I saw her dragging her off hind leg even in the walk and she was pronouncedly lame." I then asked him to put the saddle and bridle on her and have her ridden in the ring, and she went just as the foreman had said, dragging her off hind markedly in the walk. I at once attributed this phenomenon to the mouth, and, looking at the organ, found she had a narrow mouth with small, thin tongue, and rami of jaw very narrow and sharp. I found on further test that she had a very light or sensitive mouth, so asked them to replace the double bridle that had curb bit and bridoon she had been using, with a large, smooth snaffle, which they did, and she then went in a regular manner. I have seen many of such cases in which there was no unsoundness and no deformity.

Habitual "hitching" is a fault or defect just the same as other defects of action are faults and as "forging" is, but is not due to a lesion and consequently is not an unsoundness. If a horse persistently "hitches," however, he might almost as well

be lame as far as the unsightliness of the gait is concerned. In good hands, however, there is not much danger of its becoming habitual, and if it has from any cause it can generally be remedied by good management. Although there is no disease to be treated, as a rule, in overcoming "hitching" it is quite within the province of the veterinarian to put the owner on the proper course to pursue in overcoming the fault and he will gain quite as much thanks and glory by doing this as he will by curing a lame horse.

PROSECUTING ILLEGALS IN OHIO.—Dr. C. S. Bucher, of Archbold, Ohio, who was fined \$10 and costs for unlawfully practicing veterinary medicine and surgery last week, is a graduate of the Grand Rapids, Michigan, Veterinary College, but failed in his examination before the Ohio State Board of Veterinary Examiners, and was practicing without a state license. The Ohio State Board of Veterinary Examiners do not recognize a diploma from any veterinary school, the students graduating from the veterinary department of the Ohio State University, must pass the Ohio State Board of Veterinary Examiners and obtain a license before practicing in the state. The Veterinary Law was enacted several years ago but has not been enforced until within the last year, and now is being enforced throughout the entire state, and all illegal practitioners are being prosecuted. Sections 1 and 10 of the law read as follows: Section 1. (Examination of Veterinarians) All persons who now, or shall hereafter, practice veterinary medicine and surgery in the State of Ohio, and have not been engaged in such practice for at least three years prior to the passage of this act (May 21, 1894), in the State of Ohio, shall be examined as to their qualifications by a state board of veterinary examiners. Section 10. (Penalty, emergency) Whoever shall engage in the practice of veterinary medicine or surgery in violation of this act shall, for the first offense, be fined not less than ten dollars, nor more than twenty-five dollars, and for the second offense not less than fifty dollars nor more than one hundred dollars, or be imprisoned in the county jail not more than sixty days, or both. Provided that nothing in this act shall be construed to prohibit any veterinary advice or service in case of emergency if rendered by a person not entitled to practice under this act.—(*Democratic Expositor, Wauseon, Ohio.*)

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

CHRONIC HYDROCEPHALUS.

By WINIFRED B. MACK, University of Nevada.

March 14th, I was called to the Experiment Station Farm to see a bay gelding about twelve years old, weighing probably 1,200 lbs. He had been a carriage horse until about two years ago, when on account of lameness from a bone spavin, he was discarded for this purpose and has since done light work on the farm. Until recently he was considered a remarkably intelligent horse.

The first apparent symptoms of disease appeared a few days before I was called, when in leading him from the stable, he collided with the door-post. Since then he had grown awkward in his work and had shown reluctance in turning toward the left. When first examined, he was at work to a light wagon. Was dull, listless, unintelligent; responded slowly to word or whip. His reluctance to back amounted almost to inability. Would turn readily in a narrow circle to the right, but it was impossible to turn him toward the left. His expression was languid, lips flaccid, ears drooped, mastication was slow and indifferent. He would assume abnormal attitudes; would stand with his anterior legs crossed, when they were placed in that position, until he lost his balance.

The attendants recalled, on being closely questioned, that for some time he had shown peculiarities of temperament, not remarked at the time. Where formerly, if allowed freedom of direction, he would return to the stable, of late he was as likely to go in the opposite direction.

Respiration, pulse and temperature were normal; digestive organs apparently healthy. Examined him closely for evidence of injury, but aside from a bone spavin, and the cerebral symptoms above noted, he appeared sound.

I diagnosed "Immobility," or chronic hydrocephalus, gave an unfavorable prognosis, advised rest in stable and corral, laxative diet, with purgative and tonic treatment.

March 19th he was observed to fall three times, but arose without help.

March 20th he was led from the stable with some difficulty to pose for the accompanying photograph. At this time he would sometimes pause during the mastication of a mouthful of hay, and appear to forget to finish it. On his return to the stable he fell and for some time efforts to induce him to arise were fruitless. While undertaking to move him to the stable, he arose and walked there, but with staggering, uncertain gait.



During the night he forced open the stable door and wandered away, through two fairly good fences, and was found in the morning in a ditch. He was drawn from the ditch, covered with blankets and lay there for three days. Finally, on account of a heavy snowstorm, he was hauled to the stable. March 24th he was found dead.

The autopsy showed the anterior third of the left cerebral hemisphere very soft, the wall thin and markedly degenerated. All other parts appeared normal, except the spavin above mentioned. There had been no injury about the head or back to account for his awkwardness or immobility.

The photograph reveals much as to his cerebral condition. The most remarkable feature of the case was his rapid decline after the first symptoms capable of attracting the attention of the attendants.

INTERESTING CASES FROM AN OHIO PRACTICE.

By J. E. FOSTER, V. S., Coshocton, Ohio.

Intraplacental Transmission of Rabies.

The first case I wish to report is one of rabies, the patient being a cow which had given birth to a calf a few days previous to her illness. The cow died the fourth day after the appearance of the disease. About one week after the cow's death the calf sickened with the disease. The interesting point in this connection is that this was a case of intraplacental transmission of the infection.

Ringling in the Ears.

A man came to my office and asked me to examine his four-year-old mare. I examined her while standing on her left side, then stepped to the right side, and told him that I could see nothing abnormal. He replied that I had detected the ailment, or at least that I had noticed it. He asked me if I had not heard a ringling sound while standing on the left side of the animal and if the location of the sound did not change when I stepped over to the right side. I replied that I did hear the ringling and that I thought the sound was produced by a steam whistle at a considerable distance. He told me to go near the mare's head, that I could then easily locate the music. I found that the sound came from the ears. The ringling sound was distinctly audible at a distance of from eight to ten feet from the animal.

Tuberculosis of the Heart.

I received a call by telephone to go to the country to determine the cause of death of a steer. When I arrived, I learned that the steer had been in apparent good health until he had fallen and expired. I told the owner that when he called me, I thought the animal had been sick for some time, that if I had known the steer died suddenly I likely would not have gone to make an examination, as it would likely be difficult to find the cause of death. However, I proceeded to hold the autopsy. The

contents of the abdominal and thoracic cavities appeared to be normal with the exception of a piece of brier, three inches long, being in the posterior portion of the left lung. The brier caused very little disturbance and certainly did not cause the animal's death. At some time previous I had seen cases of tuberculosis on this same farm. The steer I was examining was in fine condition, and I thought while I had the opportunity I would see if this animal might have tuberculosis. I found some glands about the throat tuberculous. I then wondered if tuberculosis of some important organ might not have caused death. I examined the heart: externally it appeared to be normal, but on cutting through the heart the knife passed through an abscess the size of a hen's egg.

Abnormally Located Testicle.

One of my patrons who had recently bought a number of Western steers told me that one of them acted as though he had not been unsexed. He had examined the animal and discovered nothing abnormal except a tumor about six inches to the right of the navel. He asked me to go and examine the steer. I found that the tumor on the abdomen was a testicle. The spermatic cord could be felt extending subcutaneously from the external inguinal ring to the testicle. The testicle was easily removed.

Extra-uterine Pregnancy.

During the month of March I was requested by a man who called at my office to prescribe for a mare that, judging from his description of the case, was suffering from impaction of the bowels. He had given her a full dose of physic without results. He requested me to go and see her. The symptoms presented were those of impaction of the bowels. However, one prominent symptom usually absent in impaction was present in this case. While standing, she would lean to the right until she became unbalanced; this she repeated frequently. The mare was pregnant. Examination per rectum revealed nothing abnormal except the colon being distended and contents somewhat impacted. Examination per vagina revealed nothing except dark tenacious mucus about the os uteri. I administered a full dose of aloes, also left stimulants and nux vomica to be given. The second day after my visit the owner reported the mare was no better and that the purgative had not acted. I prepared a physic of raw linseed and croton oils, which he said he could

give her. I heard nothing more of the case until one day when I was driving by the man's home. He asked me to stop and take a look at the mare. At this time she was very unthrifty; and there was a large dropsical swelling on her breast and abdomen. He stated he was certain the mare had not dropped the colt; that she had carried it nearly two months over time. I told him it was very probable she had dropped it in the pasture. The pasture she was in contained much thicket and underbrush. He said he had hunted carefully over all the pasture and had not found it. The following winter I was called to see a sick mare about six miles from the above place. I asked the owner if Mr. So-and-so did not own the mare the previous winter; he replied he did. I then told him of the experience I had had with her. At this time she showed symptoms similar to those she had shown the previous winter. I told the owner she would die, as examination per rectum revealed what seemed to be a foal, or what was left of it. Examination per vagina revealed nothing abnormal. I requested the owner to make an examination after her death. He did, and reported the foal had grown outside the uterus.

A Live and a Dead Fœtus.

During the month of February I was called to attend a mare from which a part of the foetal coverings were protruding. An examination revealed a dead foetus and very putrid condition of part of the contents of the uterus. The dead foetus was removed. On inserting my hand to remove retained afterbirth, I discovered another foetus. Owing to the putrid condition of the membranes and the first foetus, I did not hesitate to remove the second foetus. I was somewhat surprised and much disappointed for having removed it, as it was alive; its heart beat for some time after it had lain on the floor.

Birth After Abortion.

In the same month (February), but not the same year, I was asked for information and treatment to prevent a mare from aborting. I told the owner that if the symptoms were as pronounced as he described them, nothing could be done. When he arrived home the mare had aborted. The following spring she gave birth to a normal foal.

Three Testicles in a Colt.

One spring I castrated a yearling colt, and early the next spring the owner stated the colt was becoming very trouble-

some; that he acted much like a stallion. He asked me if I knew why he was so? I replied I did not know. I told him that I had noticed recently an account in a veterinary magazine of a horse having three testicles and that the only solution of his case was that the colt had been similarly endowed by nature. The colt continued to become more troublesome, and I was requested to find the cause if possible. One could feel a small tumor high in the inguinal region. I told the owner that the enlargement was abnormal and that it no doubt was the cause of the trouble. He requested me to operate, and in doing so I found the enlargement to be about one-third the size of a normal testicle, almost spherical, attached about $1\frac{1}{2}$ inches above the stump of the cord; its structure was much like that of a testicle.

RUPTURE OF THE ŒSOPHAGUS IN A HORSE.

By E. J. CARTER, V. S., Pittsburg, Pa.

Called early Tuesday morning, Sept. 10th, to a large hauling stable to see a dappled gray horse, eight years old. The animal was said to be choking. Arriving at the stable, I found the stall full of saliva, it being discharged both from the mouth and nostrils. Pulse 50, temperature normal, respirations 40. He did not evince any pain on pressure of the laryngeal region, and I was somewhat mystified as to the cause of the trouble and unable to make a satisfactory diagnosis. The animal did not exhibit any pain; the only thing to be seen was the quickened respirations and the profuse discharge of saliva. I had the animal removed to a comfortable, well-ventilated box-stall, and used a counter-irritant in the region of the pharynx and larynx. I had a bucket of water placed in the manger, in which was dissolved one ounce of ground chlorate of potash; had all hay removed out of the stall and ordered thick oatmeal gruel. I returned at 5 P. M. to learn that the animal drank the water, but upon attempting to partake of the oatmeal gruel he would vomit it back again through his nostrils.

I gave him a few handfuls of dry oatmeal, which he swallowed, but it only reached a point in the œsophagus opposite the fourth cervical vertebra where it became lodged and made a tumor the size of a man's fist. He now exhibited distress, and commenced coughing, throwing up the oatmeal through his nostrils, the tumor immediately disappearing. I now offered him

water, which he drank, but this caused a swelling; but it passed onwards to the stomach. I now felt satisfied that I had here a rupture or some kind of a lesion of the œsophagus, and probably caused by the ingestion of some foreign body.

I saw the animal on the morning of the following day. He appeared much more tranquil and the respirations were reduced to 30, pulse normal. The enlargement of the neck would only appear when drinking or attempting to eat. I rubbed a blister over the seat of the passive tumor, and gave him oatmeal gruel, with chlorate of potash.

I saw him on the 12th, much in the same condition as on the previous day, and he refused to accept of any food, not even sliced apples, grass, or green corn.

On the morning of the 13th I was notified that the animal had died at 4 o'clock that morning.

I made a post-mortem a few hours later, but could not find anything abnormal, except on opening the œsophagus and at the point where the enlargement occurred, I found a rupture of the mucous membrane and a bare spot the size of a man's hand. The only covering left was the thin cuticle. I examined the stomach, expecting to find some foreign body, but not so. It was empty, except for a small quantity of the oatmeal gruel. All organs in the body appeared perfectly healthy.

What was the cause of the lesions found in my post-mortem?

A PECULIAR SYMPTOM IN A MARE.

By C. W. LASSEN, M. D. V., Lake Forest, Ill.

I was called on the evening of July 1, 1907, to see a mare that was cast in her stall. On arriving, I found that they had succeeded in getting her up and out of the stall. The mare was a good sized Western horse, weighing about 1,050 lbs. She had put her head under the rope in her halter; she was tied in a single stall; and in trying to release herself had jumped up into the manger. The halter rope produced a mild burn in the groove behind the maxillary angle of the jaw on the right side. She was very weak and hung her head very low; breathing could be heard through the ear, producing a peculiar crackling sound. The tissues under the rope burn were infiltrated and crackled on pressure and very tender. A facial paralysis was noticed to be coming on the right side. One grain of strychnine sulphate was given hypodermatically and hot creolin compresses applied

to the poll. Patient was placed in a box-stall. Weakness progressed till she laid down. While lying down, her breathing was fast. In about 30 minutes she got up and drank some water and seemed very much stronger. In about two hours from the time of the accident she began to exhibit this peculiar symptom: She commenced to bite herself all over the left side of the body; in no one particular spot, but only on the left side. She did not paw with her front feet, neither did she kick with her hind ones. Her biting was so vicious that she bit all the hair off in several spots, making the skin raw. This apparent itching lasted for four hours, when it stopped as suddenly as it commenced.

The next morning she ate and drank fairly well, but the facial paralysis was now very well marked.

At the present date, Sept. 3, 1907, it is well marked, showing atrophy of the eyeball, etc. She eats and works fairly well. Patient had no fever at any time. Client on seeing her so well, put her to work two days after, saying that he had to work her as this was his busy season and he could not afford to lose her labor if she could pull a trace.

In inquiring into her past history, I found out that she was very irritable, the least little sore making her very nervous.

Was this a nervous irritation, or was it a case of generalized anæmia on the left side at the time of the accident, followed soon after by a congestion?

EXPERIENCES WITH IRISOL IN MANGE.

By B. K. Dow, V. S., Willimantic, Conn.

Having used Irisol with good results in various cases I determined to test its merits where several calves were infected with *Trichophyton tonsurans*, a form of ring-worm which manifests itself in elevated circular patches about the mouth, nose, eyes and ears, also along the top of the neck and down the shoulders in some cases. These spots or patches were denuded of hair, covered with a grayish crust which was thick and hard, and considerably elevated above the normal skin. This form of "mange" being of vegetable origin, highly infectious and difficult to eradicate, I decided to try Irisol, one ounce in seven ounces cotton seed oil. Thoroughly washed the spots with strong soap and water once only and applied the Irisol Oil every day, having it thoroughly rubbed into the skin. A change for the better was

noticed after the first application, scales and thickening began to disappear, itching stopped, in a few days the hair began to grow as naturally as ever, and in a short time the spots were entirely covered, making a perfect cure without any discomfort or danger to the animal or its mates.

This remedy being non-poisonous, if licked off, easily applied and very penetrating, makes it truly an ideal parasiticide. I shall endeavor to give the drug further trials in diseases of the skin.

A DELAYED CASE OF PARTURIENT PARESIS.

By J. H. KNOX, D. V. S., Forest Grove, Oregon.

On Aug. 25, 1907, I was called to a thoroughbred Jersey cow which had calved April 7, 1907, and found her displaying the characteristic symptoms of so-called milk fever. She showed weakness while being driven home from pasture and as soon as she reached the barn went down. I administered an hypodermic of strychnine, gr. j, and inflated the udder with air. In an hour she was resting easily. I repeated the strychnine in three hours, and left her for the night. In the morning she was up, and made an uneventful recovery.

The interest in this case is in the fact that the attack occurred eighteen weeks after calving.

THE ONTARIO VETERINARY COLLEGE opened its session on October 17, and although it inaugurated a three-year-course, it is stated that a large class of freshmen have entered.

At Swan River, Manitoba, Canada, Sept. 5, Norman West pleaded guilty to having practised as a veterinary surgeon without the necessary license and was fined \$30 and costs by Police Magistrate Lewis. The Veterinary Association of Manitoba conducted the prosecution.

ONE of the latest developments in the horse goods trade is a sleighbell trust. There are, or were, in the United States fifteen manufacturers, all of whom recently combined to lower the cost of production and raise the selling price. All but four of the factories have been closed, while a string of bells which formerly sold for \$2 now sells at double this price.

ABSTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

“RAILROAD DISEASE” IN CATTLE [*Prof. Schmidt*].—At a meeting of naturalists, held in Stuttgart, Prof. Schmidt, of Dresden, spoke on the pathogenesis and treatment of “railroad disease” in cattle, its great significance for dealers and official veterinarians. The disease appears in highly pregnant cows, particularly in those animals which have been let out early to pasture and immediately after and during extended transportation. It occurs almost exclusively in the months from April to September. The nourished condition of the animal plays no part whatever. The first symptoms are those of excitement and uneasiness, with the tail extended; crossing of the legs; laying down and frequently changing position. Then follows the stage of depression, the animal being unable to rise; the head is held in the position as if affected with parturient fever; the pupils dilated; the eyes dull, lifeless; the pulse returns to normal; breathing is costo-abdominal, arrhythmic and more and more gurgling; the temperature remains within the physiological limit; appetite is lost; intestinal peristalsis is suppressed; constipation sets in; no desire to drink, or it may be the contrary; the udder is filled to its capacity; no labor pains are observed. As a rule the urine is retained; it is usually stained a yellowish red, alkaline in reaction and rarely contains albumin. “Railroad disease,” also deceitfully termed “railroad or traveling fever,” and also called “*Pansenlecre*,” is differentiated from parturient fever by its presence in grass cattle (the latter is peculiar to stall-fed cows); it attacks the animal, as a rule, when the journey by rail occupies more than a day to reach the destination, and ante-partum, peritonitis, rupture of the intestines and poisoning are also of importance for differential diagnosis. As the paralytic symptoms increase the animal usually dies in complete coma after 24 to 48 hours. In very few cases recovery ensues through birth during the sickness. Nevertheless, through timely and expert treatment, emergency slaughtering

and natural deaths have been rare. From the various views of former authors, who claim to have found the paunch empty and the muscles stained and alkaline in reaction, the author directs attention to the fact that such extraordinary lesions never came to his notice. No microscopical striations were perceptible only in the lumbar muscles. The other histological examinations were negative. The lymph glands, particularly those of the posterior portion of the body, were infiltrated, the udder hyperæmic, purely physiological manifestations of a highly pregnant animal; so that animals of this kind could be slaughtered in emergency cases and the meat sold in open market. The author maintains, in view of his wide experience, that it is impossible to make a muscle degeneration or an extraordinary emptiness or a concussion of the cord the cause of "railroad disease"; formerly he considered it was probably an autointoxication; latterly, however, he attributed the severe symptoms purely to a circulatory disturbance in the medulla oblongata and brain. Prof. Schmidt outlines the pathogenesis of the disease as follows: The great demand which through balancing and through the weight of the gravid uterus is placed upon the muscles, especially those of the posterior part of the body, through the motion of the car, a great amount of blood is called for in the muscles and spinal cord in addition to the great amount of blood already used by the gravid uterus, placenta and udder, and finally the perspiration and adaptation to the temperature in the skin in warm weather is the cause of the intense hyperæmia in all these parts. If to all this is added the fact that grazing cattle are unaccustomed to stall ventilation, the lack of drinking water and the increased secretions, is it to be wondered at that the brain and medulla oblongata are anæmic and their centers, especially their vascular centers disordered or abnormally excited? Hutyra and Marek coincide in this opinion, who deny an anæmia of the brain as an important etiological factor in "railroad disease," with the restriction, so long as the vaso-motor apparatus is unimpaired, for it is well known that pregnant women and cattle are frequently subjected to circulatory disturbances. Muscle degeneration is then of secondary importance. Regarding the treatment of this disease, it should be on the same principles that govern the treatment of parturient fever, that is, a heart sustaining remedy, chiefly the caffeine salts subcutaneously to counteract the depressing effect of the air infusion in the udder, which makes the former symptomatic curative methods needless. Prophylaxy—

avoid overloading of cattle in cars; give plenty of water to drink; an intervening rest during long periods of transportation and avoiding exposure to drafts of air. These latter are practically impossible; therefore practical prophylactic measures are at present unknown. Dr. Uebele, in discussing this subject, thought that aside from an anæmia of the brain and medulla oblongata, an auto-intoxication may have some essential bearing upon "railroad disease." Recently there has been observed in human practice an instantaneous disappearance of self-formed poisons in human eclampsia after delivery. In acceptance of an auto-intoxication we can readily understand the immediate curative effects of air infusion in the udder. [The translator is of the opinion that a similar disease has been observed by him in cows arriving at the Stock Yards, Buffalo, N. Y. These animals, likewise, had been subjected to long distance transportation by rail and were well advanced in pregnancy, more than probable within two weeks of calving. The symptoms observed in each case and classical history obtained were in accord with those described by Prof. Schmidt, of Dresden.]

BACTERIA IN THE HEALTHY TISSUES OF THE BODY [*Selter-Bon*].—S. states that in the normal lung tissues spore-forming bacteria are frequently found together with pneumococci and other virulent bacteria. The intestinal bacteria can penetrate the macroscopically intact intestinal wall and gain the mesenteric lymph glands. Upon the impenetrability of the mesenteric and other lymph glands depends the freedom of the blood from bacteria, likewise the liver, spleen and kidneys.—[*Deutsche Mediz. Wochenschrift* No. 47.]

THE EFFECT OF FORMALIN AND HYDROGEN PEROXIDE UPON MILK [*Dr. P. Baudine*].—The author takes up the task to test both those lauded preparations as preservative agents for milk and their behavior toward this article of food. (1) The behavior of the pepsin ferments toward milk mixed with varying quantities of formalin and hydrogen peroxide. (2) The effect of formalin and hydrogen peroxide upon the pre-existing soluble ferments in the milk. (3) The behavior of milk mixed with formalin and hydrogen peroxide toward the action of artificial ferments. (4) What quantities of these substances must be added to milk to obtain the practical advantage. As a result of these investigations the author publishes the following: (1) That formalin changes the milk to such an extent that it does

not react again upon the pepsin ferments. This change is the more perceptible the longer the disinfectant remains in contact with the milk and the larger the quantity used. However, milk treated with hydrogen peroxide reacts the same as normal milk on the pepsin ferments. (2) Both agents do not exhibit any recognizable influence upon the soluble ferments present in the milk. (3) In contradistinction from the hydrogen peroxide, formalin, even when added to the milk, in small quantities, hinders the proteolytic effect of the artificial ferments, pepsin, pancreatin considerably; and if used in large quantities brings about important changes in the hygienic and chemical properties in the rennet. (4) That formalin, added to milk in the proportion of 1-5,000 and 1-10,000, preserves the milk 6 to 12 days. Yet it is highly probable that the continued use of formalinized milk is harmful. (5) That hydrogen peroxide, in the proportion of 1-3 per cent., preserves milk 3 to 6 days; that milk thus preserved is in no way harmful.—[*Centralblatt für Bakt.*, 41. Bd., 2 Heft, page 271.]

REGARDING THE BACTERIAL CONTENT OF FISH MEATS [*Samuel Ulrich, Zürich*].—As a result of his scientific work the author arrives at the following conclusions: (1) The number of bacteria in raw fish meat is already considerable at normal temperature. Two groups are particularly represented; one which liquefies gelatine (proteus group), the other does not liquefy that media (coli group). The coli bacteria predominate in numbers and growth. (2) When fish is freshly bought and is prepared for cooking in the customary manner even then its meat is not sterile. It represents a favorable culture media for microorganisms. These bacteria increase enormously, particularly at higher temperatures. Both species mentioned under heading one are also found in cooked meat, and the proteus group being still less virulent than the coli bacteria. (3) After experimental feeding with the raw and cooked meat no perceptible difference regarding its virulence could be demonstrated. As a result of subcutaneous injection with the broth of the cooked meat the infected mice, rats and guinea pigs die as quickly as those which were infected with the washings of the raw meat. (4) As the microorganisms develop in the cooked meat, especially in very large numbers, particularly at high temperatures, it seems hazardous to eat fish meat in summer later than 24 hours after cooking.—[*Zeitsch. für Hygiene und Infektionskrankh.*, Bd. 53, H. V.]

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D. V. M.

TRACHEAL ULCERATION IN GLANDERS [*W. Hunting, F. R. C. V. S.*].—In 1902 the author published statistics of the post-mortem lesions found in 1,000 cases of glanders. The figures showed that in 20 per cent. of these cases tracheal ulcerations existed, in most cases in conjunction with ulcerations of the nose and in a small number of the larynx. It was found in only 19 cases or 2 per cent. as the sole ulcerative lesion. In the whole thousand cases nodules were found in the lungs. Recently considerable numbers of horses have been killed on reaction to mallein. Among these reactors, which are generally killed within three days of being injected, it is found that not less than 8 per cent. on post-mortem reveal ulcerations of the trachea. Generally the ulcerations are small and few, varying from the size of a pear to a three-penny piece and numbering three or four. In some cases they may be as large as a shilling or they may be small and plentiful over a large extent of the trachea. Tracheal ulcerations must be accompanied by danger of infection and the danger increases as the lesion gives no sign of its existence by clinical signs. These cases of tracheal ulcerations deserve careful attention, and when on post-mortem one is found and traced back to the stable from which it came, there is always a plentiful crop of disease, as the result of its infection. There are reactors which are not killed immediately, and if 8 per cent. of them are suffering with tracheal ulceration, there is an unsuspected danger which demands the close and earnest attention of the sanitarian.—(*Veterinary Record.*)

PARTURIENT ECLAMPSIA IN THE COW [*Henry Taylor, F. R. C. V. S.*].—This is the record of three cases followed by recovery. *Case I.*—Cow calved about a week. Symptoms: Grinding of the teeth, frothing at the mouth and dribbling of saliva. Curious licking of one foreleg and gnawing of one fetlock. When moved, she staggered. Constantly rubbed her nose on the ground. Then she had convulsions, and during the spasms she turned three complete somersaults. Eyes bulging and staring. Pupil not dilated. Pulse and temperature not much disturbed. Treatment: Bromide of potassium for two days, and then extract of belladonna. Animal got well and has had calf since. *Case II.*—Cow had calved eight days, when she had a fit, followed by many others. Her eyes are staring and have a wild expression. When made to move she almost falls down. She

becomes very excited when medicines are given to her. Bromide of potassium and chloral brought her to. A week later while being taken to market to be sold, she becomes exhausted and has convulsions. Bromide pulls her through. After several months she became paralyzed and was slaughtered. *Case III.*—Had calved 15 days. She has a funny appearance, devouring the grass as if she was mad. Brought to the barn, she falls into a convulsion and drops into the manger, on her back with her four legs sticking in the air. She had another attack two days later after being milked. She had a good dose of linseed oil and a few doses of bromide and got well in four days.—(*Veterinary Record.*)

DIAPHRAGMATIC HERNIA [*L. E. W. Bevan, Govt. V. S.*].—A mule, aged 15 years, has had hard work, and one morning is found suffering with great abdominal pains. These were relieved with due treatment, but in the evening the symptoms returned with great acuteness. The pulse was hard but regular, the conjunctivæ spotted and very red, ears warm and legs cold. She had sweated a great deal. The breath was quite offensive and sour. She had spasms every half-hour and then would look towards her flank, make a violent effort and roll on her back, remaining in that position with her legs doubled up or spread in the air. She seemed to have relief only when in that position. She passed considerable wind and defecated. This condition lasted all day, but finally she died. The treatment had consisted in the administration of a bottle of salt and water, later a mild drench of creosote and æther. Epsom salt was also given and several rectal injections of soap and water. At the post-mortem there was found an old lesion of the diaphragm, consisting in an opening through the right half of the muscle on a level with the foramen dextrum and at the junction of the muscular and tendinous portions. Through the hole passed a loop of small intestine and a portion of the omentum, both of which carried lesions testifying to their long existence.—(*Veterinary Record.*)

A NEW SKIN PARASITE (LOUSE) OF SHEEP [*J. A. Gilruth, M. R. C. V. S.*].—This is the concise reference to a new variety of lice, *Hamatopinus*, which so far has never been described in sheep, and which has been found in the South Sea Island and sent to the author, who is chief veterinarian and bacteriologist to the Government of New Zealand. Specimens of this parasite have been sent also to Prof. Neumann, who has

said: "It appears to be without doubt a new species. It is closely allied to *Hæmatopinus vituli*, L., which lives on the ox, especially the calf, but it is certainly distinct in several characters." More about this parasite will be made known later on.—(*Veterinary Journal*.)

CASE OF PIROPLASMOSIS IN A PONY [*H. S. Allen, A. C. C.*].—A few lines relating the history of this pony, an eight-year-old Arab gelding, taken ill and dying after ten days of sickness. The parasites were found in blood smears on the day of its death. At post-mortem there were found old lesions of pleurisy, peritonitis and hepatitis. The liver was adherent to the diaphragm and weighed $15\frac{1}{4}$ pounds, the spleen $7\frac{1}{2}$, the heart $9\frac{1}{4}$. Both the liver and spleen were cirrhotic; the heart somewhat in fatty degeneration. Both lungs were congested. Other organs healthy.—(*Veterinary Journal*.)

DEGENERATION OF THE SOLE WITH DESCENT OF THE PEDAL BONE [*R. Macgregor, M. R. C. V. S.*].—Black gelding picked up a nail in the centre of the outside of the frog in the *near* hind leg. The nail went in deep. The animal was in great pain. Three abscesses formed on the course of the extensor pedis tendon. After opening the animal seemed somewhat relieved. After three weeks of treatment, he became very lame in the leg of the other side, the *off* hind. On examination it was found that the pedal bone was protruding right through the sole. The horse was destroyed. At post-mortem the lesion of the near leg was found healed.—(*Veterinary Journal*.)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D. V. M.

ŒSOPHAGEAL FISTULA IN A FOAL [*Dr. Felice Cinotti*].—A foal, 40 days old, received a kick on the left side of the jugular groove and about the middle of the neck. At first nothing seemed to result from the injury, but after a couple of days the swelling that had formed, as a consequence of the kick, broke and permitted the escape of a yellowish fluid mixed with milk. Brought to the clinic of the Veterinary School of Pisa, the diagnosis of œsophageal fistula was rendered evident, not only by the presence and the character of the wound of the neck, but also by the escape of milk, when the foal was allowed to suck his mother. The animal was cast and exploration made of the region by dissection on the tract of the œsophagus with a catheter introduced into it, revealed the presence of a laceration of the organ,

running obliquely from upwards downwards and from forwards backwards. It measured 3 centim. in length and had the borders irregular and necrotic. All the surrounding tissues were more or less diseased and infiltrated. Temporary intubation of the œsophagus, limiting the introduction of the tube only to the injured part, was resorted to. A red rubber tube being introduced with much care and difficulty, was secured with two strong points of suture after the extraction of the catheter, which demanded much attention. The animal was then allowed to rise, to suck, and, as no milk oozed out, the dressing was completed by a bandage and a muzzle applied to prevent the little fellow from eating the straw of its bedding. This did well for the first six days, but one night, although well watched, the whole dressing was disturbed, little fragments of straw bulged through the wound, the rubber tube was displaced and the cutaneous wound torn. Another intubation had to be resorted to. A much longer tube was introduced, secured more solidly with four sets of sutures and the wound outside of the œsophagus was closed tightly, muscles and skin. The four sutures held on well and came out in proper time, the outside wound healed well and recovery was perfect without symptoms of stenosis. The rubber tube was not found and had probably been expelled with the fæces.—(*Il Nuovo Ercolani*.)

FINE RECOVERY FROM PUERPERAL COLLAPUS [Dr. Ivo Ceschelli].—Interesting because it shows that success may follow even with the worst cases. This cow had been suffering with parturient apoplexy for several hours and was in a state of coma. Her death was in fact expected by the owner, who had called the butcher to bleed her. However, the author asked to attempt treatment, and, being allowed, inflated the udder with air, using a pump as those used for bicycles. After some hygienic measures, the cow was left to herself, the owner being recommended to bleed her if improvement did not show itself soon. After a short time the animal was able to rise and to nurse her calf. Recovery went on without any trouble.—(*Giorn. della R. Soc. ed Acad. Veteri. Italiana*.)

ENORMOUS PURULENT AND GASEOUS COLLECTION IN THE GUTTURAL POUCHES OF A COLT [Dr. Domenico Bernardini].—A filly, aged eight months, has a swelling since she was four months old, which has considerably increased lately. Spread more on the left than on the right side, this swelling extends in the submaxillary space, forward in the sublingual region,

backwards to half the sides of the neck and goes up on both sides along the two parotids. It is not hot, nor painful, the skin over it is in normal condition and fluctuation indicates the presence of pus, while percussion reveals also that of gases in the guttural sacs. The animal is in good condition. There is no nasal discharge. The animal was prepared for operation, cast, and the pouch opened with a large trocar introduced in the center of Viborg's triangle. Over two and a half litres of pus, color of coffee and milk, with a slight rosy tint, was allowed to escape. A drain was applied and disinfecting injections recommended. This treatment was kept up for some time, but as the discharge did not seem to stop, another interference was indicated. The filly was again thrown down, the part freely exposed and a portion of the membrane of the sac was amputated, as well as all the surrounding infiltrated tissues. After two days of comparative improvement, symptoms of gangrenous broncho-pneumonia manifested themselves, and in two days death took place. At the post-mortem, besides the pulmonary lesions, a quantity of pus was still found in the two guttural pouches, principally in the left.—(*Clinica Veterinaria.*)

ULCERATIVE RHINITIS SIMULATING GLANDERS [*Dr. Luigi Cominotti*].—After recalling several instances of somewhat similar nature as recorded by various authors, the Doctor describes the case of a twelve-year-old horse, recently purchased, which had a muco-purulent and adherent discharge from the left nostril. This running forms a grayish crust, not striated with blood, although the horse was reported as having had epistaxis quite often. On the internal commissure of the nostril there is an ulcer about the size of a dime, circular, without elevated borders, not surrounded by indurated tissue. Again, on the external commissure there is another ulceration of the same aspect and nature. The pituitary membrane is congested and presents ecchymotic spots. The intermaxillary glands are swollen about as large as a potato, bosselated, not adherent to the bone. It is not very painful. There is no tendency to suppuration. The sinuses are cleared. Sero diagnosis and mallein tests remain negative, although repeated several times. Inoculations to dogs, guinea-pigs and donkeys were also negative. Microscopic examination of the scraping of the ulcers likewise. In the meantime the general condition of the animal improved and the ulcerations became cicatrized. In ten days the horse returned to his owner.—(*Clin. Veterinaria.*)

ARMY VETERINARY DEPARTMENT.

YE WEARY AND DOWNTRODDEN, MUSTER YE STRENGTH—AN EPISTLE FROM THE PHILIPPINES.

It is the habit of our regimental chaplain to encourage those who are in need of sympathy with an uplifting sentence of the Scriptures, and being his neighbor I have come to see the good they do. It has seemed to me for some months past that the above quotation fits the case of the U. S. Army veterinarian just now. Some letters received from colleagues on foreign service in Cuba and the Philippines are almost pitiful reading, and they voice a discontent that is ominous. They are particularly bitter about the insufficiency of our pay to meet the heavy expenses incurred by our periodical migrations. These writers are not only in need of sympathy, they are in need of help; they are too manly fellows to publicly complain about such a matter as pay, but it is somebody's duty to expound their cause. Of course, they are men with families and as our pay stands they have either to nearly starve themselves or go into debt. One of them says it is like "giving us a shrimp and squeezing out a lobster." Not so long ago one of our generals propounded the dictum that the lieutenants of the army should not marry unless they had private incomes. This would equally apply to the veterinarian because he is supposed to live as officers have to live, and this is doubly hard on our married men. I do not want to offend our few bachelor-veterinarians in the army, but I wish to say a good word for those that are married. I believe the latter are, on the whole, more respectable and valuable. They have acquired a strong sense of responsibility towards their families, and they exercise the same sense towards the Government in the strictest attention to duty. The old bachelor officer or veterinarian, on the other hand, is apt to be overbearing and conceited, and in certain directions he is ten times more of a nuisance than an old maid. Sorry, indeed, would be the day when our lieutenants and veterinarians should be ordered into celibacy. This may be economical for Royal armies, but a Republic should pay

for value received, which is not done in the case of the veterinarian. He is the lowest paid of any representative of the professions that are needed in the army; the surgeons, the chaplains, even the dentists, who are novices in the army, start in with the pay and allowances of a first lieutenant, whereas the veterinarian, who has served the army since 1863, still remains on the pay-list as a second lieutenant and is always the last when allowances, such as quarters, are to be distributed. If there are none left, as sometimes happens, he simply has no abode; if he is a bachelor he may bunk in with a hospitable youngster among the lieutenants, but if he is married no such hospitality can be extended to him and then there come the tears of the poor little wife children. These conditions cannot be argued away by explanations, as is sometimes attempted to smooth things over; they should be mended by action, which must come from ourselves.

What are we doing towards this end? We here in the Philippines naturally hoped that our colleagues in the States would set the wheel again in motion, as the distance is too great for our active coöperation. We say, as all others have said before us when on duty here: "We shall agree with all that you may do, but do it." Yet here I have a letter from one of us just returned to the homeland; he is a great, big, good-natured fellow with a perpetual smile on his face, a hard-worker and sturdy man. Certainly, he is not a pessimist, but he writes: "I have not been able to find anyone doing any work for the coming session of Congress. In fact, there seems to be a good deal of discouragement among the army veterinarians here in the States."

Discouragement—we should not know such a word. Our little bill has failed to pass Congress, and it is our privilege and duty to try it again and try it better. We all know what we need, and even the youngest among us know now what we cannot get. What we need to properly fulfill our professional duties in the army is:

(1) A veterinary organization, however small, with one of our good men as a chief veterinarian and guiding head. This was stricken out from our bill.

(2) Rank or grade in order that our recommendations to our superior officers may have some weight, and our directions to our subordinates be enforced. This was stricken from our bill.

(3) More pay and greater allowances to enable us to pay our bills and have a roof over our heads for the protection from inclement weather; we asked in our bill that this be given to us after five years of service, but it was changed to ten years of service.

(4) The assurance that when maimed or crippled by the tools of warfare, or by military manœuvres or hard garrison toil in time of peace, or when incapacitated by old age, that we be allowed to end our days humbly and peacefully on a small retirement pay. Thank Heaven, this was promised as far as the aged men are concerned, but it seems doubtful if it may properly extend to younger men who may be disabled.

(5) Constant self-improvement in our professional accomplishments; to prove our faith we recommended that we be again examined in order to obtain a promotion which would secure to us \$8.33 per month additional pay. This was sanctioned, a discharge-clause added for those that may fail, and exemption from examination granted for those of over fifteen years of faithful service.

It would be disrespectful, and a waste of time besides, to argue here for the points for the bill stricken out by the General Staff. Our side of the argument has never yet been heard at the proper place, nor will it ever be listened to until we have a chief veterinarian who by a thorough knowledge of military life and by a broad-minded conception of matters veterinary in army organization will have won the confidence of the War Department. This day is a long way off.

Prudence dictates, therefore, that we drop points 1 and 2 of our original bill in order not to irritate, and liberality suggests that we acknowledge the good-will shown in our behalf in drafting for us a new bill which, after all, exhibits a vast improvement over our present status.

Personally, I believe that it would be to the best of our interest to adhere to a broad-minded policy in our action for next Congress and abstain from suggesting amendments or even small corrections. If there is anything radically wrong—from our viewpoint—it would be less irksome and offensive to ask for an entire new section of the bill. I believe the bill is radically wrong in the *matter of pay alone*, and we should try to have an entire new section substituted. It will be remembered that when we drafted our original bill in 1904, some of us suggested to ask for the pay and allowances of a first

lieutenant, mounted, on entering the service, and for the pay and allowances of captain, mounted, after ten years of service. However, the younger men among us wanted rank above all else, and being greatly in the majority we came down again "in rank" to that unlucky precedent in our status—a second lieutenant. Even those new in service have now learned that we cannot get the rank, and may I remark at this time that the rank of a second lieutenant is absolutely undesirable for a veterinarian of ripe years, because it is the lowest rank given only to a youngster because of his limited experience and undeveloped manhood. In general, our older veterinarians of to-day can command a more ready hearing at the Regimental Headquarters than the lieutenants and even the younger captains can, so that it would be going down-hill instead of up-hill should we be compelled to accept the rank of a second lieutenant. But it has become a grave question if the pay and allowances of a second lieutenant are equal to the expenditures demanded of us. Leaving out of consideration the tax to which we are subjected in constant movements, sufficiently referred to above, let us look at our expenses to procure and maintain our equipments. It takes about \$600 to purchase our uniforms, personal equipments and horse equipments, and it takes about \$300 more to purchase two horses, one saddle-horse and one pack-horse. To this we must add the monthly expenditures for hire of a horse-striker, repairs, etc., which sum up to about \$150 a year at a low figure. I have once personally complied with all these requirements according to army regulations and orders, and I know that it cannot be done at our salary of \$125 per month. Nobody will admit that the salary of a first lieutenant, mounted (\$133.33), is a princely income, but most of us may look at the salary of a captain, mounted, (\$166.67), as the first scale of pay in the army that is at all commensurate with our expenditures and a fair interest on the investment made when we paid for our professional education at the college and the university to properly equip ourselves for the scientific life-work of a veterinarian.

I would suggest, therefore, that our army colleagues at Fort Riley, constituting our legislative committee, prepare a new petition to the War Department setting forth the absolute necessity of increased pay as recommended above; that they secure the consent of the army veterinarians serving in the States, and forward this petition in time for the deliberations

of the proper military authorities before the meeting of next Congress. Do not be influenced by the possible introduction of the Dick-Capron Bill.

The advantages accruing from a better pay would be greater than it may appear at first sight; it would do away with the worry about the daily bread and salt, a condition that breeds discontent, and that makes our army men look with envy upon the better-paid veterinarians in civil life; it would silence the often-heard threats to resign from the army when such colleagues should put their whole soul into the future development of our veterinary service. And above all, the increased pay of a first lieutenant and captain, even without rank, would give us a better standing in the army, for American men and women, in and out of the army, acknowledge intuitively income above mere authority.

This much to-day. In another letter, shortly to follow, recommendations will be made in regard to other pressing matters that should no longer be postponed, but they do not necessitate legislative action by Congress.

OLOF SCHWARZKOPP.

Camp Stotsenburg, P. I., Aug. 12, 1907.

ARMY PERSONALS.

VETERINARIANS NOCKOLDS AND PICK, 1st Cavalry, have been ordered to the Philippines for service at Camp Stotsenburg, where they will arrive in January, 1908. Dr. Schwarzkopf, who has been on duty there, will return to the States and be stationed at Fort Clark, Texas. He is already getting material in hand for a paper for the 1908 meeting of the A. V. M. A. on the almost virgin subject of "Veterinary History."

VETERINARIAN HANVEY, 6th Cavalry, en route to the Philippines, paid a visit to "Honolulu Bill" Monsarrat, and, as is proverbial, he was royally entertained. A veterinarian passing through Hawaii without calling on Monsarrat will have to explain his conduct. He is one of the "show places" of the Sandwich Islands.

BRAYTON H. RANSOM, chief of the zoological division of the Bureau of Animal Industry, is the author of Circular 116, entitled "Notes on Parasite Nematodes, Including Descriptions of New Genera and Species, and Observations on Life Histories."

THE MONTANA SMOKE CASE.

An important point in the celebrated suit of the stockmen of the Deer Lodge Valley, Montana, against the mine owners for the recovery of damages to live stock alleged to have been caused by arsenic deposited upon the grasses, hay and grain of that region through the smoke from the smelters, has been reached in the report of Master in Chancery Crane to the Federal Court. The Master reviewed the case *in extenso*, and we find the following synopsis of his conclusions in the *Anaconda Standard* of October 6:

A concluding paragraph in the findings of Master in Chancery Crane says that the damages sustained by the Deer Lodge farmers represented in the smoke case, if the smelter were closed, would be "greater than the damage they would sustain by the continuance of the smelter as the same is now operating." In its opening paragraphs the report gives the history of the litigation, the story of the Bliss property, and the way in which the association of Deer Lodge farmers came into the case. It sketches the history of the smelting plant in Anaconda. It observes that some of the farmers were in the valley 20 years before the smelting plant was started, and during that 20 years there was no complaint from the ranchmen. It reviews the development of the mining operations in Butte which resulted in the building of the smelter in Anaconda, and it describes the efforts of the owners of the Washoe smelter to spare the adjacent valley from damage, by the construction of the great stack and its flues. It is recited that the Washoe company endeavored, regardless of expense, to render the smoke harmless; that the steps thus taken are far more extensive than those in any other smelter in existence, that the smoke was thus rendered less harmful than formerly, that the sulphur is not doing injury, that the arsenic is working injury to the soil and crops and live stock in the valley. The losses sustained by Bliss, the plaintiff, are stated. It is added that if the smelter operations are continued, damage will be done in sections of Deer Lodge Valley which would be of recurrence and difficult to compute, and that, except in former instances, to which reference is made, the defendants have not paid damages, and they refuse to pay. The general character of the valley land involved is described as not first-class, and the farming of it is spoken of

as not proper in many respects. The growth of the city of Anaconda is sketched, figures are given in illustration of the capital it represents, and the large part the smelter plays in the life of the business of the city is set forth. The money represented in the smelting plant is mentioned. It is found that a site better adapted to smelter work, within easy reach of the Butte mines, could not be found, that years would be required for a transfer, that the suspension of work in Anaconda and in Butte thus entailed would be vast, that the processes now used are the best known in the metallurgical world. Salient figures representing wealth, population and industry in Butte are given in detail, and the statement made that the closing of the Anaconda smelter would involve the cessation of two-thirds of the mining operations in Butte. Many statistics are quoted respecting payrolls, products and the like. It is found that the corporations involved pay more than 50 per cent. of the taxes in Deer Lodge County and about 30 per cent. of the taxes in Silver Bow; that the suspension of the smelter would impoverish, if not wipe out, both counties, that the two counties contribute about 30 per cent. of the taxes for state purposes, and that the depreciation involved would seriously impair the state's revenues. The twenty-ninth finding is that the closing of the smelter would work destruction and irreparable injury to the complainant and to others owning property in the Deer Lodge Valley, and that damages which would be so sustained by these owners in the valley, namely, the complainant and others, would be greatly in excess of the damage they would sustain by reason of the continuance of the said smelter as now operated, and that the closing down of the Butte mines, which would be caused by the cessation of operations at the Washoe smelter, would cause an irreparable injury to the farmers of the Deer Lodge Valley, by loss of their only remaining near market. It is found that the defendants in this case are "solvent and able to pay and respond for all damages which have been, or may be, sustained by property from the operations of the said Washoe smelter."



Some of the points in the findings are as follows:

That the arsenic, in its various forms, so as aforesaid set free and discharged into the atmosphere, from said smelting plant, has been and is now being carried by the winds and air currents over and above and upon an indeterminate portion of the Deer

Lodge Valley adjacent to the said smelter, including lands and premises owned by the said complainant, and hereinbefore described, depositing at times sufficient quantities of arsenic on the hay, grasses and fodders growing thereon to injuriously effect and poison the live stock which eat of said hay, grasses and fodders, and feed at large on the pastures and ranges thereof, causing numbers of said live stock so poisoned to sicken and some to die from the effects of said poison, so that that portion of the Deer Lodge Valley thus effected is rendered thereby less profitable and less valuable for stock raising, grazing and farming purposes, and the hay and other fodders grown thereon rendered less salable and less wholesome for feeding to any animals than otherwise would be, so long as the defendants continue in the operation of said smelter in the reduction and treatment of said ores as aforesaid, to discharge into the atmosphere such quantities of arsenic as they have been and are now so discharging from their said smelting plant.

* * *

That by reason of the defendants operating the said Washoe smelter since remodeling the same, and so as aforesaid causing to be emitted from the smokestack of said smelter into the atmosphere such quantities of arsenic in various forms, with the result therefrom as aforesaid, the complainant has suffered special damage and injury in the sum of \$350, the same being the actual loss suffered by him in the depreciation of the rental value of the said land and premises, so caused by the said defendants, during the period mentioned.

* * *

That the said Washoe smelter is situate contiguous to an extensive farming and grazing neighborhood lying in said Deer Lodge Valley, which is inhabited by a large number of farmers and ranchmen who own or possess many thousands of acres of improved and unimproved farming and grazing lands, and who reside upon said lands as their homes and keep a large amount of live stock, horses, cattle and sheep, thereon, and follow and pursue farming, dairying and live-stock raising as a means of livelihood; that said farmers and ranchmen constitute a large farming and grazing neighborhood, and the said arsenical fumes so as aforesaid emitted from said smelter more or less affect injuriously all of said lands, and all of said farmers and ranchmen are, more or less, similarly situated as said complainant and are,

more or less, similarly injuriously affected by the said arsenical fumes emitted from said smelting plant.

* * *

That if the said defendants continue to operate the said Washoe smelter as heretofore, the said noxious arsenical emanations therefrom will continue to be precipitated and deposited at times upon the forage crops grown upon the sections of the Deer Lodge Valley heretofore mentioned, including the premises of the complainant, thereby poisoning more or less all such future crops of said lands and rendering the same noxious and unwholesome food for live stock to the damage of said farmers and ranchmen; that each year and each crop season will bring new causes of action in favor of said farmers and ranchmen and against said defendants by reason of loss due to the thereby lessened value of said crops and the sickness and destruction of live stock consequent upon their eating and ingesting the same, all of which will cause a multiplicity of suits in order to collect damages, which said damages will be difficult of proper computation. That if said smelter close operations the said farms and the farm of complainant, in the course of one year after said poisonous substance should cease to be precipitated thereon would be restored to their normal and natural condition.

* * *

That many of the said farmers and ranchmen have settled upon and own the lands injuriously affected by the said smelter fumes in the Deer Lodge Valley prior to the year 1870, and have continuously been residents thereon up to and including the present time, and long prior to the conducting of any smelter plant in the said region.

* * *

That there is and has been at all times during the periods of operations of the said Washoe smelter an excessive and abnormal amount of sickness and some deaths among the animals feeding and grazing upon the hay, grasses, vegetation and pasturage growing upon the said injuriously affected portion of the Deer Lodge Valley, to-wit, horses, cattle and sheep, said death and sickness being due to arsenical poisoning, caused by the arsenic in various forms in the fumes emitted from said Washoe smelter and precipitated and deposited on said growing pasturage and afterwards eaten and ingested by said animals.

That the said defendants or either of them have not paid any damage which the said farmers and ranchmen have sustained, as aforesaid, by reason of the operation of said Washoe smelting plant since the remodeling of same and the building of said large stack, and the said defendants have at all times and do now refuse to pay any damage which has resulted from the operation of said Washoe smelting plant since July, 1903.

CORRESPONDENCE.

QUESTIONS UPON RABIES.

159 E. BENEFIT ST., PROVIDENCE, R. I., October 7, 1907.

Editors and Collaborators of American Veterinary Review:

DEAR SIRs:—Rabies is again afflicting Providence and I am searching for information on the subject and know of no better place to find light than in your columns. If not too much trouble I would like a personal letter so I can present it to the R. I. V. M. A., which meets this month. I desire to correspond with anyone who has investigated the subject and will be pleased to receive names of investigators and literature on the subject. That the answers may facilitate matters I have put my inquiries in the form of questions. Thanking you in advance, I am

Very truly yours,

JOHN A. McLAUGHLIN.

* * *

QUESTIONS ON RABIES.

Have you ever seen a case of rabies in the living dog?

What ante mortem proof have you of rabies in dog?

Are the negri bodies alone diagnostic of rabies?

How can you prove the negri bodies are diagnostic of rabies?

Are dumb and furious rabies one and the same disease?

Are negri bodies always found in dumb rabies?

Who diagnosed rabies in the living dog for Pasteur or any other investigator?

Before the negri bodies were discovered in 1903 was it possible to diagnose rabies by microscope?

If it was, what advantage have the negri bodies over the old method?

What proof is there that any individual in the past, or in the present, was or is capable of diagnosing rabies in the living dog?

BIBLIOGRAPHY.

TRYPANOSOMES AND TRYPANOSOMIASIS. By A. Laveran, Member de l'Institut, et de Academie de Médecine, Paris, and F. Mesnil, Chef de Laboratoire a l'Institut Pasteur. Translated and much enlarged by David Nabarro, Member of the Royal College of Physicians, London, etc. With colored plate and 81 figures in the text. Chicago: W. T. Keener & Co., 90 Wabash Ave. 1907.

The revolution created by the discovery and rapid development of the trypanosomes and trypanosomiasis has made it imperative that every veterinarian and physician shall be familiar with the subject. Particularly has the invasion of civilization into the tropical countries stimulated medical science to unravel the mysterious diseases which had cursed these regions and retarded their progress. In the majority of instances the trypanosomes, in one form or another, were found to be the real infective agent, and a study of their habits and modes of infection is gradually bringing them under the control of medical science.

Among the first to devote their time and energy to their study were Laveran and Mesnil, and some three or four years ago they published the first edition of "Trypanosomes and Trypanosomiasis." It contained all that was known at the time and at once became an authoritative guide to those who, in most all countries, began the study of the important subject. Since then the field has greatly expanded, and the present volume, translated and enlarged by Prof. Nabarro, bears but little resemblance to the original work, so great have been the additions and embellishments.

To all who wish to bring their knowledge upon this subject up to date this book is the only means, and the efforts of the authors and publishers will no doubt be fully appreciated. The price is \$7.50 net and can be obtained from Messrs. Keener & Co.

STRANGEWAY'S VETERINARY ANATOMY. Eighth Edition, Revised and Edited by I. Vaughan, F. L. S., F. Z. S., Fellow of and Examiner on Comparative Anatomy to the Royal College of Veterinary Surgeons, etc. Chicago: W. T. Keener & Co. 1907.

We have received from the publishers a copy of this well-known text book, which has been an authority upon anatomy for more years than the writer of this acknowledgment can remember. Endorsed by all faculties, whether they give preference to Strangeway's or Chauveau's nomenclature, no words of ours could add to or detract from its position in the education of the student. The simple announcement that Messrs. Keener & Co. have brought out a new edition, with a thorough overhauling by Prof. Vaughan, is quite sufficient.

OBITUARY.

THEODORÉ K. VERY, V. S.

This well-known veterinarian died at his home in Boston rather suddenly in September. He belonged to the "old guard," and in the early days of the profession in this country was a strong factor in its building. He was a pupil of Dr. George H. Dadd, who had a few veterinary students in Boston some fifty or more years ago. He was an early member of the United States Veterinary Medical Association, having joined that organization in 1872 and remained an active member for twenty-six years, during which time he was a conscientious worker for its best interests. He was a colleague of Drs. J. H. Stickney, E. F. Thayer, the Drs. Saunders, William and Robert Wood. In his prime he conducted a large practice, and at different times in his career had been very well-to-do financially. He invented several mechanical appliances, from which he derived considerable income, and for a long time conducted an extensive shoeing forge, which paid him well. The only official position held by Dr. Very was that of veterinarian to the Board of Health of the City of Boston, or at least he was employed by the board for many years to inspect glandered horses. Of recent years his health had been very poor, his investments disastrous and his good wife an invalid. In the face of such adversity, however, he exhibited great courage, and it is said that no person ever heard him complain.

JOHN A. MADDEN, D. V. M.

Dr. John A. Madden, of Bozeman, Montana, died suddenly on September 18. He had not been in good health for the past year and had been confined to his bed for a few days, but seemed to be improving, when he grew suddenly worse and died in a few hours. The cause of death was œdema of the lungs.

Dr. J. A. Madden was 31 years of age and was born in Massachusetts. His early education was secured at country schools, and later he attended the Mt. Herman Preparatory School at Mt. Herman, Mass., for three years and a half, taking

the scientific course. He later attended the New York State Veterinary College, Cornell University, for three years, graduating in the class of 1904. After graduating from Cornell he was employed as Federal Meat Inspector, being stationed at St. Louis, Mo., and Troutdale and Portland, Oregon.

He went to Bozeman April 5, 1906, to enter into partnership with Dr. H. C. Gardiner and take care of Dr. Gardiner's practice while he was away. He remained with Dr. Gardiner up to July 5 of this year, when the partnership was dissolved. He held the offices of State Sheep Inspector, Deputy State Veterinarian, State Fruit Inspector and Meat and Milk Inspector of the City of Bozeman. He had one sister, Mrs. Nellie Madden, of Boston, but no other near relatives so far as can be learned from his friends in Bozeman. He was a member of the Elks lodge of Bozeman, and all arrangements were made by the members of that order.

F. R. PATTERSON, D. V. S.

The body of Dr. Patterson was received at Grand Rapids, Mich., the middle of October, from Butte City, Mont., where he died a few days previously from cancer of the stomach. He graduated from the Grand Rapids College in its early days and practiced in that city for some time, removing to Butte City about three years ago, where he became veterinarian to a construction camp. He is survived by a widow.

THE story is going the rounds of the lay press that a dog traveled 300 miles to Chicago in search of his mistress, and among the 2,000,000 population of the Windy City had no difficulty in locating his friend. This item was probably originated by one of those "nature fakers" whom the President recently castigated.

Word is received that the total enrollment at the Kansas City Veterinary College has reached the 450 mark notwithstanding that many applicants were rejected on account of deficiency in preliminary education and others on account of the lateness of their applications. This appears to be the record attendance in America.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The eighteenth annual meeting convened in the Academy of Medicine, 17 West Forty-third street, New York City, on Tuesday, September 24, the Society being called to order at 11 A. M. by President W. L. Williams, with Secretary Garry T. Stone recording. The president stated that the delay in opening the meeting had been occasioned by the non-arrival of the Secretary's papers, but as they were momentarily expected he thought it best to open the session. President Roscoe R. Bell, of the Veterinary Medical Association of New York City, then, upon behalf of the city organization, welcomed the State Society to Gotham and gave a brief outline of the arrangements that had been made for their accommodation and entertainment. President Williams fittingly responded and then proceeded to read his excellent annual address, as follows:

PRESIDENT WILLIAMS' ADDRESS.

• "In the fulfillment of my duty to you as president our constitution demands that I should at this time submit, as an annual address, a review of the status of our profession, especially within the state, and to make such recommendations for your consideration as may seem prudent.

"In general we may report the condition of the profession as excellent, that at no prior time in our history have veterinarians been so prosperous, nor have the ideals of the profession ever been so high.

"During the period from September 9 to 13, inclusive, the American Veterinary Medical Association and the closely related Association of Veterinary Faculties and Examining Boards of North America, were in session at Kansas City, and, in some respects, they were by far the most notable in the history of veterinary science in America. The attendance greatly surpassed that of any prior convention, but that alone had no great significance.

" The most distinctive feature of the convention throughout was the universal sentiment in favor of higher and better veterinary education and served as a great inspiration to everyone having the advancement of the profession at heart.

" The presidential address of Prof. Law was a passionate appeal for distinct advances in teaching and practice; the report of the Committee on Intelligence and Education by Prof. Pearson was a powerful plea for better veterinary colleges in point of buildings, equipments, materials and faculties, while the address of your president urged the necessity for advancement in the requirements for the matriculation of veterinary students. Other addresses, resolutions and actions of the convention participated in the well-nigh universal plea for higher professional ideals and the meetings throughout served as an inspiration for a better profession.

" It has a double significance for the veterinary profession in the State of New York, for, not only do the members of the profession in the state, as a body, favor higher and better education, but the state came boldly forward and, by statute, placed veterinary education upon a higher plane than obtained elsewhere in America, so that we now have, and long have had, the strictest requirements for admission to practice of any state on the continent.

" The wisdom of the State of New York has been seriously questioned by many and it has certainly been accompanied by some friction and regrettable results, though, on the whole, the effects of the law have been salutary.

" The statutes directed that, beginning with 1896, matriculants entering veterinary colleges should have 48 Regents counts and the application of this rule well nigh caused desertion of the veterinary colleges, and so disastrous was the result that the requirements were temporarily reduced to 24 counts, and the original demand was not restored until 1905, when it was found that nearly four times as many men entered in the State College as had done under similar requirements nine years before, while in 1906 the entering class was approximately double that of 1905 and larger than in 1897 or 1898 under the rule requiring half the amount of preparatory education. It would, therefore, appear that the advance in preparatory education has proven wise and has become permanently and irrevocably established and that the state and the veterinary profession are the better for it.

"In our annual address last year (AMERICAN VETERINARY REVIEW, October, 1906, Volume XXX., page 869) we had occasion to point out certain undesirable conditions accompanying the application of our state licensing laws, the principal feature of which was the wholesale violations of them by the great number of men who were practicing as veterinarians without license. The year has brought no changes in this respect except, possibly, that the number of matriculants in veterinary schools has increased, and thereby the future aspect is rendered clearer and more assuring.

"We, in that address, divided the violators of the license law into the following six classes:

"I. Veterinary graduates ineligible to take the state license examination and practicing in open defiance of the law.

"II. Veterinary graduates of the same educational qualifications as Class I, practicing as "manager" or "assistant" under the name of a licensed veterinarian but outside his territory or actual supervision and probably paying tribute to the licensed protector.

"III. Veterinary graduates of the same qualifications as Class I, directly employed by licensed practitioners as assistants at a salary and performing all the functions of a qualified veterinarian, including the making of calls and prescribing.

"IV. Non-graduates, such as stablemen, employed by licensed veterinarians, sent out to perform the ordinary duties devolving upon veterinarians, making calls, examinations and prescribing.

"V. Veterinary graduates eligible to enter the examinations of the board and who have taken them, but enter upon practice before receiving the state license or having official information that they have succeeded in passing.

"VI. Undergraduate students working for a nominal sum during vacation under a practitioner who introduces them as "doctor" to his clients and sends them out to answer general calls and perform the functions of a veterinarian without immediate supervision.

"It was then asked which of these six classes of violators should be prosecuted and which allowed to go exempt. But to one query the society made no reply. As in the first year of the present administration so during the past one, no prosecutions of illegal practitioners have occurred and, although the present law has now been in force for more than ten years, the records

of this society, so far as can be found, relate no case of prosecuting, although we are all fully aware that the violations are numerous under each of the six classes enumerated. It is essential that we repeat the opinion, expressed a year ago, that those charged with prosecutions for illegal practice must first be armed with directions from this body, which of these violators to prosecute and which to let alone. So far as we are aware there has not yet been a day since the enactment of the law but that uniform prosecution of *all* offenders would have involved directly or indirectly one or another of the high officers of this society, members of the State Veterinary Examining Board or of the Prosecuting Committee itself. Under such conditions successful prosecution of violators of the law is impracticable. The first essential in the problem of prosecutions is to gather together a body of men ready to conduct these, none of whom are themselves in violation of the law. If the New York State Veterinary Medical Society is to successfully prosecute illegal veterinary practitioners it should begin by securing the resignation of each member who is himself violating the law by employing or protecting some one illegally practicing.

"There are other things which are more important than the prosecution of illegal veterinary practitioners. It is of vastly greater importance that we secure an ample number of *legal* and efficient practitioners. If we had these the prosecution of illegal practitioners would be comparatively simple; without these their prosecution is impracticable; but ultimately the people will demand veterinary service of some kind and they will get it in some way. If we have very high requirements fewer candidates will succeed and hence fewer veterinarians will be licensed; if lower requirements prevail more men will be enabled to practice legally. The greater the number of legal practitioners in the present state of veterinary education in America the fewer will be the illegal practitioners, and *vice versa*, the fewer the legal the more illegal men.

"The opinion was ventured in last year's address that the State of New York contained more illegal veterinary practitioners than any other state. No data have come to hand during the past year to change that conclusion. Some hearers regarded the statement as pessimistic but it was not so intended. It is equally true that New York has more legal veterinarians to-day of high academic and professional education than any other state. It should further be remembered that a large proportion of our ille-

gal practitioners are just as good as the legal practitioners of other states. We have, entering the state each year, graduates from the colleges in Chicago and Toronto, who are generally barred from our state examinations, but they are just as efficient as practitioners as though they began practicing in other states where they would be legalized, or as they would be in this state in case the laws recognized them as legal practitioners. To assert, therefore, that New York has more illegal veterinary practitioners than any other state is not equivalent to stating that it has the poorest veterinarians.

"In the annual address of a year ago it was pointed out that the number of new licensees who actually enter and remain in practice in the state is approximately 25 per cent. of the required number for maintaining the existing number of veterinary practitioners. The deficit is largely made up from the ranks of illegal men. In other words, the teaching colleges of the state need to graduate about four times as many men each year as they have done during the past in order to keep the ranks of practitioners filled with competent and legal men. The problem is similar in all states. In states where no laws exist the veterinary service is poorer than in those having regulations. The difficulty with the veterinary service in America to-day is not with too stringent or too lax laws, but with the veterinary colleges and other educational agencies through which too few competent men are made available for practice. Colleges which turn out inefficient men contribute nothing thereby toward the establishment of adequate veterinary service. It is impossible to put enough incompetent veterinarians into a community to establish a good veterinary service. In order to finally reform the veterinary service we need first supply an ample number of competent veterinarians and then eliminate the inferior practitioners. In America there has been an attempt first to eliminate the incompetent veterinarians and then to fill the vacancies with competent ones. In a large measure the placing in practice of competent veterinarians eliminates the incompetent men. The live stock owner usually recognizes the difference between the competent and incompetent and prefers the former, eliminating the latter through refusing him patronage.

"Veterinarians are largely interested in the problem of how we may increase the number of efficient veterinarians and decrease the inefficient. Of the men who have been legally licensed to practice in the state since 1906 a large proportion have at-

tempted practice for a time and have then abandoned it for other lines or callings. Partly this abandonment has been due to the issuance of licenses to men who were really incompetent to render at once an efficient service, leading the practitioner to give up the effort and accept a fixed salary in civil service or elsewhere. Some who have remained in practice for a number of years are not successful, are not competent. No law can insure the competency of a veterinary practitioner, no examination yet devised by examining boards of teachers has served to separate the efficient from the incompetent. The efficiency of a veterinary practitioner must be determined by the actual test of practice, and, in a large number of instances, the beginner becomes disheartened before he has really given himself a fair trial and deserts practice for civil service when patience and zeal would have brought him success.

"This suggests that our men, when licensed, are not sufficiently prepared to begin a successful career when they enter practice and, in turn, intimates that the teaching colleges are not doing their duty. Such, we believe, is the frank admission of every competent veterinary teacher. No man can be properly prepared for veterinary practice in three years of six to nine months each, however high his preparatory training or excellent his college course. If young men leaving college are to become successful practitioners they need graduate with such complete and practical knowledge that they may at once render efficient service. As it now stands the licensee has but a dim outline of practice and needs acquire practical efficiency after being licensed instead of before. Our greatest need, in order to secure efficient, is more efficient veterinary education. Our colleges should be better equipped and better manned while our laboratory and especially our clinical teaching should be revolutionized.

"One of the most important elements in the veterinary practice laws of New York is the State Board of Veterinary Examiners. The New York law differs in important respects from most if not all practice laws in other states, especially in the relations existing between the New York State Board of Veterinary Examiners and the Department of Education. In a peculiar degree the association is responsible for the character of the board, its members being nominated by the society, but, while the responsibility largely continues, the powers of the society essentially cease when the board has been nominated. The

first laws upon any subject are liable to be defective and, after observation and trial, to need amendment, and I wish briefly to draw attention to some defects in our statutes and their application which, in my judgment, call for correction, especially in relation to our State Board of Veterinary Examiners.

"I. The method of selecting this board is perilous and the danger is intensified by carelessness on the part of our members. Three years ago, virtually without notice, we were called upon at our meeting in Brooklyn to nominate ten men from amongst whom the Department of Education was to select a board of five examiners, each to serve for a term of five years. In that meeting but few members were present, a number were excluded from the eligible list because they were engaged in teaching and others were disqualified because they had not yet been in practice in the state for the statutory five years, so that a majority of the eligible members present were nominated. Evidently the large number of nominees demanded restricted the choice very greatly and also tended to diminish the feeling of responsibility on the part of the voters. The nominations were hurriedly made without preliminary canvass. Had any voter been asked why he voted for this or that one he probably could not have given a very intelligent reply. What evidence had the voter that the ten men for whom he voted would make good examiners? In which subject or subjects was each competent to examine? What did this or that one know of physiology, anatomy, chemistry, materia medica, medicine, surgery or obstetrics? Was he competent in one or all of these subjects? If in one only, would he examine in that or in some other subject? The question is an important one, yet how lightly answered! Our membership from amongst whom we nominated ten veterinarians out of which number a board of five was to be selected is largely made up of veterinarians who have graduated from colleges requiring little or no education for entrance and some of them demanding attendance at but two sessions of six months each, and these must examine men who were required to possess two to four years of high school education for entrance and then to attend a veterinary college of three years of six to nine months each for graduation.

"Considering these conditions the society has been peculiarly fortunate in the selection of its nominees for these very important positions, highly capable and progressive men being generally selected, but the dangers to which we are subjected are too great to be ignored and should be lessened as promptly as

practicable. I believe the selections of examiners would be safer and better if, instead of appointing an entire new board every five years, one member was appointed annually, his duration of office to be five years, thus making the board continuous and calling upon the society for two nominees annually from which the educational department would select one. If, in addition to this, there were some plan for making advance nominations which voters might study, the selections might be made in a far more intelligent manner.

" If we would but use our opportunities we could have somewhat comprehensive knowledge of candidates for re-election, especially if a man has been on the board his list of questions in prior examinations might be secured and the voter might be able to reach some conclusion therefrom as to his fitness as an examiner. Anyone who has reviewed the questions presented at various examinations could not well avoid noting the inadequacy and impropriety of some of them and the value of others in testing a candidate's efficiency as a practitioner. Many questions asked are irrelevant, immaterial or simple catches which have no tendency to reveal the fitness of the candidate to practice, and an examiner who has once propounded such questions has demonstrated his unfitness for the position. There are, however, numerous difficulties in the way of the voter in studying the fitness of a candidate as examiner, one of the chief of which is the anomalous relation of the board and its members to the society and profession. The members of this society receive no report from the State Board of Veterinary Examiners, nor is any such report available. The education department prints a report of the examinations with the names and standing of the candidates, but this is virtually worthless so far as showing the methods and actions of the examining board. Each year the board is believed to hold a meeting behind closed doors, but what it does or how it does it is unrevealed to us.

" The relations between the examining board and the Department of Education seem equally vague. Neither appears to know what the other is doing. It has been said that the licenses to practice are signed in blank by the members of the board and that they have no means for knowing to whom such licenses are issued, whose names they bore or anything else definite concerning them. They apparently do not know who or by whose authority the names of the licensees are inserted in the licenses.

"It has also been claimed by members of the board that their question list, submitted prior to an examination, had been "edited" by some mysterious person. One examiner has personally complained to me that the examination paper as presented to the candidates was not recognizable to him as the same list which he had presented. Who "edits" these questions and by what authority?

"In our Class V of violators of the practice laws those graduates who have taken the examination of the state board and begin practice pending the result. we have regarded as being as truly violators of the law as any others. Perhaps we might say that they are among the worst type of violators. They presumably expect to conform to the law and, perhaps, believe or hope they have successfully passed; but the law is very clear and definite. Such practice is illegal. The board is partly responsible, however, for this violation. The number of candidates entering the examinations at any given date are not large enough to warrant any great delay in marking the papers and making a report. If one member of the board should be temporarily disabled the law does not dictate that he *must* mark any papers or that the marking of papers shall be at all delayed on that account. It is very evident that the examining board may delegate the marking of the papers on any subject or subjects to any member of the board or to competent persons outside the board so that the disability of one man need not delay the report. Yet it is the practice of the board to be dilatory to an apparently wholly unwarranted degree. Candidates have a right to know within a reasonable time whether they have passed or failed; but this right is ignored. Why such is the case is one of the undivulged secrets.

"Candidates trying the June examinations in 1906 received official notice of the result the last of August. Inquiries addressed to the Examinations Division of the State Department of Education regarding the results of the examinations in June, 1907, elicited the reply that the "official report" of the state board had not yet been filed and that, as soon as this was done, the desired information would be furnished me, and, since it has not yet come to hand, apparently the State Board of Veterinary Examiners has not yet completed its markings on papers filed in June last and no official reason for the delay is given. Why this delay? Can we expect obedience to our laws if the central body, about which our practice laws are grouped, is dilatory in its plain duty toward candidates for license?

" Naturally, the Examining Board must report, and be responsible to the Department of Education, but it seems to me that, having nominated these men for the office, this Society is entitled to, and should receive, a detailed report annually, which may be published and made available to its membership. Were such a report filed with this society it could be freely discussed and suggestions made which might be of value and such consideration would greatly enlighten our members and enable them to vote more intelligently when nominating examiners. Two years hence we need again nominate a new Board and it is to be earnestly hoped that the subject will in the meantime, be freely discussed.

" There is abundant room, apparently, for a better organization of the work of the Board. Teachers are barred from serving as members of it and thus a very competent class in the framing of questions is excluded, but the questions might be greatly improved in many cases if first submitted for review to the entire Board. Again the questions and markings would be better and more reliable if the person delegated for the work were chosen because of special fitness in that one subject; for Surgery, a competent surgeon; for Obstetrics, a country practitioner with extensive personal obstetric experience. Possibly some such thought is carried out. It is a notable fact, however, that the examinations in Obstetrics so far as can be discerned, have never been in the hands of an obstetrician, but always delegated to a city practitioner. The fault is not wholly with the Board as its membership is essentially confined to city practitioners and these are naturally not obstetricians.

" In these criticisms we are blaming neither the Board, the Education Department, nor any man or body of men; but merely pointing out defects which, we believe, need correction.

" We believe that the State Board of Veterinary Examiners should have increased powers and responsibilities, that the society should assume greater care and responsibility in nominating them and that the Board should become more highly organized for efficient work. In the matter of prosecution of illegal practitioners it should be the central advisory body and in general should constitute the representative of this society in the administration of the laws controlling veterinary practice.

" I would, therefore, lay before you the following recommendations:

" I. That the Prosecuting Committee of this society be discontinued.

" II. That the State Board of Veterinary Examiners, in conjunction with the president and secretary of this society, be instructed to ask the legislature to so amend the veterinary laws (a) that the duty of prosecuting offenders shall rest upon the district attorney of the county in which the offense is committed; (b) that all licensed practitioners shall annually register with the board to the end that a complete register of licensed veterinarians within the state may be maintained and published; (c) that the law be so modified that one member of the board shall be appointed annually, his term of office to continue for five years so that this society may nominate two candidates for the board each year instead of ten nominees at intervals of five years.

" III. That this society request of the board a detailed written annual report of its proceedings in suitable form for publication which shall include, among other things, the organization of the board, the subject or subjects assigned to each member for the license examinations, the lists of questions asked, the names of the candidates examined and their standing in each subject, the number of licenses issued and to whom granted.

" IV. That the board be urged by this society to enter into more direct and helpful relations with the Department of Education and that a better understanding be had relative to the ' editing ' of question lists, the signing of blank licenses by members and any other questions which serve to confuse the relations of the veterinary profession with the Department of Education."

REPORTS OF COMMITTEES.

The Committee on the Revision of the By-laws reported through Chairman George H. Berns, who read the abstract prepared and submitted by mail to the members soon after the last meeting. There were many changes made, not only through the committee but by members from the floor, who had evidently given the various sections careful thought. As a finished instrument the new constitution and by-laws is a great improvement over its predecessor, and the Secretary was ordered to have a sufficient number printed and distributed among the members. It will also contain the names and addresses of all members at the close of the 1907 meeting.

The Legislative Committee, through Chairman Bell, reported verbally that no work had been done during the year; no bills

had been introduced at Albany inimical to the profession; that much legislation was needed but that the committee's instructions were so vague at the last session that it seemed to them more light and more energy were necessary to secure needed revision than they could bestow upon it.

The Prosecuting Committee reported that nothing had been attempted nor accomplished during the year beyond the writing of a few letters to offenders. The committee was of opinion that the law must be strengthened before successful prosecutions can be undertaken.

The Arrangements Committee reported through Member Bell that it believed adequate and ample facilities had been prepared for a successful meeting, both for the literary and clinical programs, and that the comfort and pleasure of members and visitors were provided for.

The Special Committee for the Advancement of the Army Bill reported through Chairman Morris that he had some correspondence with Washington authorities in behalf of the bill but that nothing could be done for it at the last session of Congress.

NEW MEMBERS ELECTED.

The following list of applications was examined by the Board of Censors and favorably recommended for election to membership:

D. C. Huxtable, Middletown.

Ben Howes, Corning.

M. Hamilton, Delhi.

Cassius Way, Brooklyn.

A. A. Brahatt, Little Falls.

Henry Cady, Gloversville.

C. H. Taylor, Niagara Falls.

R. N. G. Darby, Fort Plain.

W. Reid Blair, New York City.

Frank Wright, Brooklyn.

RESIGNATIONS.

W. B. Mack (removed to Nevada).

Joseph H. Sutterby, Rochester.

The names of ten members were dropped from the roll for non-payment of dues.

THE ATTENDANCE.

The following list does not represent the entire attendance but is a register of those who sat down to luncheon in the Boat House Restaurant in the Zoological Park as well as a few observed at the clinic and at the Academy of Medicine: Garry T. Stone, Middletown; Wm. Henry Kelly, Albany; Wilson Huff, Rome; A. H. Ide, Lowville; E. F. Bitting, Chittening; L. G. Moore, Trenton; D. D. LeFevre, Newark; B. G. Pierce, Springfield, Mass.; George H. Berns, Brooklyn; Wm. F. Kirchner, New York City; Charles Schroeder, Brooklyn; J. G. Hill, Atlanta, Ga.; L. R. Weber, Rochester; H. R. Collins, N. Y. City; Robert W. Ellis, N. Y. City; Alphonse Dodin, N. Y. City; John G. Dolan, N. Y. City; John J. O'Connell, N. Y. City; W. Reid Blair, N. Y. City; D. J. Mangan, N. Y. City; C. E. Shaw, Brooklyn; P. A. Fish, Ithaca; C. D. Morris, Binghamton; W. L. Baker, Buffalo; W. G. Hollingworth, Utica; Roscoe R. Bell, Brooklyn; E. B. Ackerman, Brooklyn; H. D. Hanson, N. Y. City; Alexander Findlay, Harry D. Gill, N. Y. City; F. C. Grenside, N. Y. City; George H. Yates, N. Y. City; T. F. Krey, N. Y. City; J. A. Hühne, Kingston; T. F. O'Dea, Saugerties; Otto Faust, Poughkeepsie; H. Koch, Brooklyn; Geo. W. Meyer, N. Y. City; T. J. Herr, N. Y. City; W. J. Wadsworth, Cobleskill; Henry Cady, Gloversville; E. L. Loblein, New Brunswick, N. J.; Edward J. Nesbitt, Poughkeepsie; L. H. Howard, Boston, Mass.; F. J. Baker, Gouverneur; A. A. Brockett, Little Falls; G. F. Harker, Trenton, N. J.; S. H. Burnett, Ithaca; C. H. Case, Akron, O.; C. H. Fredericks, Canton, O.; E. F. Vorhes, Owego; M. C. Thompson, Sharon, Conn.; F. W. Andrews, Mt. Kisco; Geo. A. Knapp, Millbrook; M. E. Dusingery, Syracuse; R. W. Gannett, Brooklyn; Cassius Way, Brooklyn; V. A. Moore, Ithaca; P. J. Axtelle, Binghamton; R. N. Gordon Darby, Fort Plain; Joseph V. Prucha, Matteawan; Walter G. Morehouse, Asbury Park, N. J.; M. Hamilton, Delhi; C. H. Taylor, Niagara Falls; Samuel Atchison, Brooklyn; A. George Tegg, Rochester; Frank J. Loomis, Watertown; G. S. Hopkins, Ithaca; J. H. Taylor, Henrietta; Charles H. Perry, Worcester, Mass.; L. A. Paquin, Webster, Mass.; Charles Winslow, Rockland, Mass.; W. M. Simpson, Malden, Mass.; W. L. Williams, Ithaca; H. S. Beebe, Albion; W. E. Stocking, Medina; J. D. Lott, Medina; H. K. Miller, N. Y. City; A. T. Grover, N. Y. City; D. B. Rogers, London, Eng.; B. R. Wilbur, Newark, N. J.; J. G. Hill, Jacksonville, Fla.; Thomas E. Smith, Jersey City, N. J.; J. L. Wilder,

Brooklyn; J. Elener Ryder, N. Y. City; Charles S. Atchison, Brooklyn; L. McLean, Brooklyn.

The following ladies and children were noted among those in attendance: Mrs. Wm. Henry Kelly and Wm. Henry Kelly, Jr., Albany; Mrs. A. Dexter, N. Y. City; Mrs. Wilson Huff, Rome; Mrs. A. H. Ide, Lowville; Mrs. L. G. Moore, Trenton; Mrs. Benj. D. Pierce, Springfield, Mass.; Miss N. C. Berns, Brooklyn; Mrs. L. P. Webber, Rochester; Mrs. J. G. Hill, Atlanta, Ga.; Mrs. C. R. Webber, Rochester; Mrs. Robert W. Ellis, N. Y. City; Mrs. W. G. Hollingworth, Utica; Mrs. Roscoe R. Bell, Miss Virginia Bell, Master Bellmont Bell, Master Hollingsworth Bell, Master Jesse Rogers, Brooklyn; Mrs. E. B. Ackerman, Brooklyn; Mrs. H. D. Hanson, N. Y. City; Mrs. G. F. Harker, Newton, N. J.; Mrs. Charles H. Perry and Master Roger Newton Perry, Worcester, Mass.; Mrs. J. L. Wilder, Brooklyn; Mrs. H. S. Beebe, Albion; Mrs. W. E. Stocking, Medina; Mrs. J. D. Lott, Medina.

PAPERS AND DISCUSSIONS.

The business of the society was well in hand about the middle of the afternoon of the first day and the President announced that one or two papers could be disposed of before adjournment.

An illustrated paper by Prof. Veranus A. Moore, entitled "Toxic and Bacterial Immunity," was then taken up, and, although an extremely difficult subject to make plain to an audience, composed largely of practitioners, the author succeeded in giving a very clear impression to all who heard him.

Then Dr. S. H. Burnett brought forth an account of "The Control of an Outbreak of Anthrax," giving minute details of his investigations and the methods adopted for its control.

When the subject of the election of officers (who are to serve only one year instead of two, under the revised by-laws) was brought up Dr. Morris moved that a nominating committee be appointed instead of naming them from the floor, as heretofore. The motion being carried the president appointed Dr. Morris chairman and Drs. Webber and Bell. The latter two not being able to remain for an evening session, the President substituted two other names, and the matter was postponed until the following day.

SECOND DAY, AT THE ZOOLOGICAL PARK.

While a bright, invigorating day, the weather was entirely too cold for an outdoor meeting, as had been contemplated, and Dr. Blair, who had charge of the park arrangements, provided a well-adapted building in which to hold the meeting.

Dr. W. G. Hollingworth, of Utica, started the program by reading his paper on "Dairy Inspection," and he covered the subject from both a practical and scientific aspect. It caused considerable discussion, among those taking part being Drs. Kelly, Moore, Nesbitt, Baker, Webber and Morris.

Dr. H. D. Gill's paper on "Notes on the Tuberculin Test" was full of practical suggestions and conclusions drawn from extensive experience, and it was discussed by Drs. McLean, Hollingworth, Way and Moore.

"Mallein versus the Agglutination Test for the Diagnosis of Glanders," was the red flag which Dr. H. D. Gill held before the eyes of the veterinarians. He came prepared with large and comprehensive record tables of certain cases which seemed to show both tests not altogether reliable but each constituting a great advance in arriving at a diagnosis in occult cases. He was backed up by autopsies by Dr. Blair and some important data and conclusions by Dr. Collins (a female physician) of the New York Board of Health. Dr. Gill believed there should be a standardization of agglutinating equivalents, for, as each laboratory has a different ratio, it is difficult for those not laboratory experts to understand the significance of the various ratings. Gill was full of fight for his contentions and it is probable that the discussion would have been continued indefinitely if the President had not shown that it must be concluded to permit of the transaction of some other important business.

Dr. George H. Berns, in connection with this subject, gave a talk on "Practical Application of the Agglutination Test in a Large Outbreak of Glanders," and he showed his unbounded faith in the method, though not by any means condemning or underestimating mallein.

At the conclusion of Dr. Berns' talk the general discussion of the subject began and was opened by Dr. Ackerman, followed by Drs. Gill, Berns, Moore, Kelly, Mangan, Pierce and others, many taking the floor again and again.

Several other papers were upon the published program, as well as three or four volunteer ones which had been tendered

after the issuance of the regular program, but it was clear that no more could be reached. Therefore the reading and discussion of papers was terminated and the society proceeded to the

ELECTION OF OFFICERS,

which resulted as follows:

President—W. L. Baker, Buffalo.

Vice-president—Clarence E. Shaw, Brooklyn.

Secretary-treasurer—M. Hamilton, Delhi.

Board of Censors—J. W. Corrigan, Wilson Huff, Holford, Otto Faust and W. H. Pfyfe.

RESOLUTIONS ADOPTED.

The Committee on Resolutions then presented the following, which were adopted:

To Censor Veterinary Departments in the Agricultural Press.

Resolved, That a committee of three be appointed to investigate and report at the next meeting of the society on the question of criminal jurisprudence.

Committee was appointed: Drs. C. D. Morris (chairman), V. A. Moore, W. L. Baker.

On the Death of Dr. Arthur O'Shea.

Resolved, That in the death of our fellow-member, Dr. Arthur O'Shea, the veterinary profession as a whole and our State society in particular, has lost a conscientious worker, and be it

Resolved, That at this time we offer this expression of our sorrow and the same be spread upon the minutes of this society.

Recommendations of the President.

(1) That the prosecuting committee of this society be discontinued.

(2) That the State Board of Veterinary Examiners, in conjunction with the President and Secretary of this society, be instructed to ask the legislature to so amend the veterinary laws.

(a) that the duty of prosecuting offenders shall rest upon the district attorney of the county in which the offence is committed;

(b) that all licensed practitioners shall annually register with the board to the end that a complete register of licensed veterinarians within the state may be maintained and published; (c) that the law be so modified that one member of the board shall be appointed annually, his term of office to continue for five years, so

that this society may nominate two candidates for the board each year instead of ten nominees at intervals of five years.

(3) That this society request of the board a detailed written annual report of its proceedings, in suitable form for publication, which shall include, among other things, the organization of the board, the subject or subjects assigned to each member for the license examinations; the lists of questions asked; the names of the candidates examined and their standing in each subject; the number of licenses issued and to whom granted.

(4) That the board be urged by this society to enter into more direct and helpful relations with the Department of Education and that a better understanding be had relative to the "editing" of question lists, the signing of blank licenses by members and any other questions which serve to confuse the relations of the veterinary profession with the Department of Education.

It was shown that in some of the farmer papers having a department devoted to the answering of questions upon veterinary subjects that at least one of such departments is edited by a man who spreads before the readers of the paper erroneous and mischievous "information," and it was suggested that a committee be appointed to wait upon the publishers of such papers and show them the great injustice being done, not only to the veterinary profession but to their readers, and to endeavor to have such false scientists removed from their posts. The President appointed a committee of three.

The newly-elected President was then inducted into office and made some appropriate remarks, after which a vote of thanks was tendered to the retiring officers.

The place for holding the next meeting was then taken up and two candidates were placed in nomination—Utica and Ithaca, the former winning handily.

The meeting then adjourned to meet at the Surgical Clinic the next morning at 10 o'clock.

THE SURGICAL CLINIC

was held in the large veterinary hospital of the Fiss, Doerr & Carroll Horse Co., in Twenty-fourth street, and, although there was not that variety of interesting cases that have characterized the clinics of this society for the past few years, it was, on the whole, a very good one. The following operations were performed:

I. Amputation of penis under cocaine anæsthesia, operating table. Surgeon, Dr. W. L. Williams.

II. Cunean tenotomy, standing, under cocaine anæsthesia. Surgeon, Dr. J. E. Ryder.

III. Median neurectomy, on operating table; general anæsthesia. Surgeon, Dr. E. B. Ackerman.

IV. Roaring operation, horse cast on bed of straw on the roof garden; general anæsthesia administered through trachea tube. Surgeon, Dr. W. L. Williams.

V. Cartilaginous quittor, Bayer method; operating table; local anæsthesia. Surgeon, Dr. Charles S. Atchison.

VI. Cartilaginous quittor, hind foot; Bayer method; table; local anæsthesia. Surgeon, Dr. Charles S. Atchison.

* * *

NOTES OF THE NEW YORK STATE MEETING.

No better nor more instructive entertainment was ever provided for a meeting of a veterinary association than that at the Zoological Park. The only drawback to its perfect success was the lack of time to see one-half of the interesting exhibits. For this grand treat the members and visitors must ever be grateful to Dr. W. Reid Blair, member of the state society and pathologist of the park.

An illustrated account of the clinic was given in the *Herald* of the following Sunday. It not only showed the society in an enviable light but served as an excellent advertisement for the Fiss, Doerr & Carroll Horse Co. and the operating table of the Bradwood Manufacturing Co.

Theatre parties were the order of the evening. While many visitors, their wives and friends, attended various places of amusement on the first two evenings, the city association tendered the ladies a matinee performance at the Hippodrome on Thursday afternoon.

The election of officers was somewhat of a surprise as nearly every gentleman elected was from "up the state," the only exception being Vice-president Shaw, of Brooklyn.

Utica was selected for the meeting place of 1908, and it is safe to predict that the energy and wholeheartedness of Dr. Hollingworth will make the occasion entirely worthy of that event.

Dr. M. Hamilton, of Delhi, probably holds the record for advancement in the society. Joining the organization at this meeting, he was within a few hours made its Secretary.

A new record was established at this meeting in that Dr. W. L. Baker, of Buffalo, was chosen President for the second time within a few years. Some important legislation is to be undertaken this winter, and Baker is a worker at Albany and will probably accomplish more than most men could.

A good beginning was made toward squelching the miserable and mischievous influence of a certain man who edits the veterinary query department of one of the influential farmer journals. A committee was appointed to wait upon the publishers and endeavor to show them that unreliable and misleading information was being disseminated to its readers, thus doing a serious injustice to both the agriculturist and the veterinary profession.

What has become of the County Secretaries? While they never took a whole-hearted interest in their duties, we can recall a few instances where some valuable material was obtained through that source. Of recent years no appointments have been made, and, of course, no reports were received. If each County Secretary were to exert himself the majority of the qualified men of his district could be brought within the membership and co-operation of the State Society. R. R. B.

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order by President Browning in Odd Fellows Hall, Sacramento, September 4. Dr. Ward was asked to assume the duties of Secretary *pro tem*. Minutes of the meeting of the Association, held at Fresno, March 7, 1907, were read and approved. Minutes of the meeting of the Association, held at Key Route Inn, Oakland, June 12, were read.

Dr. Morrison asked for an explanation of the wording of the resolution referring to the collection of funds from practitioners north of the Tehachapi to be used in the prosecution of illegal practitioners.

Dr. Longley explained that the Southern men collected their own funds for prosecutions in the South and it did not seem fair to include them in the resolution. Dr. Archibald also spoke in the same vein. Dr. Morrison expressed satisfaction at the explanation and assured the meeting of the willingness for the men in the South to collect funds for themselves. Dr. Creeley expressed a belief that it would be unfair to receive money from the South without prosecutions being made there.

The minutes were approved.

Dr. Spencer moved that this organization ask the consent of the Southern Auxiliary in stamping out quackery and that the Southern Auxiliary make such disposition of funds as it deems best. Seconded and carried.

President Browning suggested the reading of resolutions from the Southern Auxiliary commending the action of the old Board, but Dr. Morrison asked leave to occupy the floor first. Dr. Morrison made a defense of the motives and actions of the late Board of Veterinary Medical Examiners. Dr. Tyler, Vice-President of the Southern Auxiliary, expressed a belief that the members of the Board were not guilty of unprofessional conduct. Drs. Keane and Creely spoke on the subject. Dr. Archibald also spoke on the subject. Dr. H. Spencer seconded the motion that action be held in abeyance until the courts decide. (This is the way that the notes of the meeting appear, as made by Dr. Megowen during the absence of Ward). Dr. Norton also spoke on the subject. Dr. Longley moved that a committee be appointed by the chair, to draw up resolutions exonerating the old Board. Seconded and passed. Appointed: Drs. Spencer and Longley.

Dr. Morrison, in behalf of the old Board, thanked the members for their consideration.

Dr. Longley reported progress of the Prosecution Committee. No applications for membership.

PAPERS AND DISCUSSIONS.

Dr. Tyler spoke on glanders. A lengthy discussion was participated in by Drs. Morrison, Fox, Carroll, Norton, Keane and Spencer.

Dr. Morrison moved that it be the sense of this Association that, in future, veterinarians report the existence of glanders to county, municipal and state authorities.

Dr. Keane suggested an amendment that the report be made only when animals are not destroyed, or when owners refuse to notify.

After some discussion, Dr. Keane withdrew his amendment and the original motion was seconded and passed.

Dr. Archibald gave a paper on "Opsonic Therapy," and pointed out the possible application of opsonic work to certain classes of animal diseases.

Dr. Segworth gave a paper on the "Impaction of the Colon."

RESOLUTIONS ON THE OLD BOARD OF EXAMINERS.

The committee on the resolutions concerning the old Board presented the following resolutions:

"WHEREAS, At the last quarterly meeting of this Association it was resolved that the members of the late State Veterinary Board of Examiners be and are hereby cited to appear before this Association and show cause why they should not be dropped from membership of said Association for alleged irregularity in the matter of the issuance of State Licenses, and said gentlemen having responded to said citation, be it

Resolved, That it is the sense of this meeting, duly assembled, that the explanation of the matter is entirely satisfactory, and clears an atmosphere that promised much harm to the profession of this state; and be it further

Resolved, That we are convinced that the gentlemen composing the late Board of Veterinary Examiners, in the issuance of said licenses, believed they were entirely within their rights, and the legality of their actions can only be determined by the courts."

Dr. Morrison asked that a copy be sent to the AMERICAN VETERINARY REVIEW. President Browning assented to the same.

Dr. Fox asked about the status of Dr. Neilsen, whose license from the old Board was dated about March 12, and before that Board was legislated out of existence. Dr. Fox called attention to the fact that, inasmuch as Dr. Neilsen's diploma had been passed around from one member of the Board to another, before the new legislation, that it was just as good as that of any other member of the Association. He called attention to the fact that Dr. Neilsen had been passed upon by a Board of Examiners of the Association, but that Dr. Neilsen's name was among the thirty-two refused admission to the Association by the resolution of the Oakland meeting.

Dr. Morrison took the floor and expressed a feeling that Dr. Neilsen was in no different position from that of any other practicing veterinarian in the State whose diploma had been passed around from one member of the Board to another.

The members of the Examining Board of the Association expressing their approval of Dr. Neilsen's credentials, Dr. Neilsen was elected to membership of the Association.

ELECTION OF OFFICERS.

A short recess was declared for the nomination of officers.

The following were nominated:

President—Dr. D. F. Fox.

Vice-President—Dr. Longley.

Secretary—Dr. Haring.

Treasurer—Dr. Fisher.

It was moved and seconded that the nominations for these four offices be closed. Passed.

The following were nominated for membership on the Examining Board: Drs. Creely, Spencer and Word. Seconded and carried.

The following were appointed as essayists for the next meeting: Drs. Neilsen and Hill.

Dr. Tyler invited the members to attend the meeting of the Southern Auxiliary.

A vote of thanks was tendered to the essayists of the meeting.

Dr. Charles Eastman's bill of \$13.50 was ordered, by resolution, to be paid.

Meeting adjourned.

A. R. WARD, *Secretary pro tem.*

MONTANA VETERINARY MEDICAL ASSOCIATION.

The members of this Association assembled at the office of Dr. M. E. Knowles, in the Capitol building, held in Montana, October 2d, and were called to order by President Knowles at 10.30 A. M.

The first order of business, consisting of roll-call, was then taken up. Owing to the lateness of the trains only the Helena members—Drs. M. E. Knowles, E. D. Nash and E. T. Davison—responded. In order that there might be sufficient members present to transact the routine business of the Association, it was voted, on the motion of Dr. Nash and second by Dr. Davison, that the Secretary be instructed to cast the vote of the Association for such of the members-elect as were present. In accordance with instructions, the Secretary cast the vote of the Association for Drs. W. C. Orre, of Dillon; C. F. Leslie, of Kalispel, and F. C. Fells, of Missoula, and they were declared duly elected.

We were favored with the following address by President M. E. Knowles.

" *Gentlemen:*

" I feel profoundly grateful for the compliment you have conferred in making me the first president of the first, and I trust the only Montana Veterinary Medical Association that will be perpetuated by you and your successors for all time.

" Prior to 1901 there was in Montana only three or four veterinarians, graduates of reputable veterinary colleges; but during the past six years unusual conditions of prosperity, a rapidly increasing population, a progressive tendency of our agricultural and urban population to maintain and perpetuate a superior class of domestic animals, together with a growing appreciation of the educated veterinarian, has induced more than twenty most creditable representatives of our profession to adopt Montana as a future home. I am assured that all of these new acquisitions to Montana's veterinary profession are prosperous, contented and proud of having selected Montana as a place of permanent residence.

" The suggestion by Dr. Nash that there be an organization of this association was most opportune and a happy one. Our first meeting (at which organization was accomplished) had proportionately a larger attendance than usually obtains under similar conditions in more populous states, and the papers presented at this meeting were of superior excellence.

" You have launched an organization under the most auspicious circumstances, with a *personnel* of which you may well be proud. Let us make our ideals high and determine not to fall short of attaining a position second to none of the associations of our many states.

" Let each individual strive to make his influence for the betterment of mankind be felt and appreciated in his particular community and the state at large.

" I must again repeat that the really great sphere of usefulness for the veterinarian is in preventive medicine. The alleviation of animal disease is a consummation worthy of your effort, but the prevention of disease, particularly those communicable to mankind, is an exalted attainment.

" It is with profound sorrow that I must recite the death of our brother, Dr. J. A. Madden, who passed away at his home in Bozeman, September 19. The passing of Dr. Madden has removed from our association a well-loved and valued member

who, as you all know, was most active in our organization. From Gallatin County, to a man, every citizen of which who knew him, speak in exalted terms and with sorrowed voice refer to his untimely end.

"The life of Dr. Madden is worthy of emulation; let us all strive to

"So live, that when thy summons comes to join
"The innumerable caravan which moves
"To that mysterious realm where each shall take
"His chamber in the silent halls of death,
"Thou go not, like the quarry-slave at night,
"Scourged to his dungeon; but, sustained and soothed
"By an unfaltering trust, approach thy grave
"Like one who wraps the drapery of his couch
"About him, and lies down to pleasant dreams."

The applications for membership in the Association were next considered. On the motion of Dr. Orr, and seconded by Dr. Eells, it was voted that the Secretary be instructed to cast the vote of the Association for Dr. H. C. Gardiner and Dr. W. J. Hartman, of Bozeman, and Dr. W. J. Butler, of Glendive. In accordance with instructions the Secretary cast the vote of the Association for the above-mentioned candidates and they were declared duly elected.

Then followed the reading of the Secretary-Treasurer's financial report, which showed that the finances of the Association were in a healthy condition, that we were a solvent organization and had a balance in the treasury of \$54.70 and no debts. Report referred to Financial Committee, consisting of Dr. E. D. Nash and Dr. C. F. Leslie, for examination and verification.

An adjournment was then taken until 8 p. m.

Meeting called to order at 8.20 p. m., President M. E. Knowles in the chair.

The first matter considered was the report of the Finance Committee on their examination of the Secretary-Treasurer's accounts, which they reported to be correct and as represented.

The Committee on Necrology then presented resolutions on the death of Dr. J. A. Madden. This committee, by the consent of President Knowles, incorporated in their resolutions that portion of the President's address having reference to Dr. Madden, in addition to which the committee added the following resolutions:

"WHEREAS, We feel that through his death the veterinary profession has suffered an irreparable loss, and

"WHEREAS, We not only deplore his death as a member of our profession, but as a friend whom to know was to honor for his sterling traits of character;

"*Resolved*, That the Association extend his bereaved family in their affliction the sincere sympathy of its members; and be it further

"*Resolved*, That these resolutions be entered in the records of the Association and a copy sent to his family.

" (Signed) E. T. DAVISON, }
" E. D. NASH, } *Committee.*
" W. C. ORR, }

At this meeting we were fortunate in having with us Prof. Emil Starz, the eminent chemist and true friend of the veterinary profession.

On the motion of Dr. Davison, and second by Dr. Nash, it was unanimously voted that Prof. Starz be elected an honorary member of the association.

It was also unanimously voted that all who joined the association on or prior to October 2, 1907, be allowed to come in as charter members.

Nomination and election of officers was then taken up and the following were elected for the ensuing year:

President—E. T. Davison, Helena.

Vice-President—E. D. Nash, Helena.

Secretary-Treasurer—H. C. Gardiner, Bozeman.

The matter of selecting the place for the next annual meeting was then discussed at length. Drs. Gardiner and Hartman were very active in championing the merits of Bozeman and extended a cordial invitation to the association to hold its next meeting at that place. While the enterprise of Drs. Gardiner and Hartman was fully appreciated, it was deemed expedient, for a time at least, to hold the annual meeting at Helena.

We were then favored with an excellent paper on "Ptomaines and Ptomaine Poisoning" by Prof. Emil Starz. The reading of this paper was followed by a spirited discussion in which the unsupervised butcher and milkman with their preservatives and embalming fluids came in for a goodly share.

On the motion of Dr. M. E. Knowles, and second by Dr. Orr, it was voted that a committee be appointed to furnish a pathological exhibit for the next state fair and also to act as a publicity committee.

The next on the program was a discussion on "Quacks and Quackery" by Dr. F. C. Eells, of Missoula. The matter was ably handled and as a remedy for prevailing conditions it was suggested that each and every member constitute himself a committee of one and endeavor to interest his representative in the cause of effective veterinary legislation, with the object in view of securing something effective in that line at the next session.

Dr. H. C. Gardiner, of Bozeman, delivered an address covering extensive research work along the line of "Experimental Arsenical Poisoning." The excessive amount of arsenic, in solution and in the powdered form, ingested with apparent impunity by the various control animals, was a revelation to most of the members present.

There being nothing further to engage the attention of the Association, meeting was adjourned, peace and good will prevailing.

E. T. DAVISON, *Ex-Secretary-Treasurer.*

MISSOURI VALLEY VETERINARY ASSOCIATION.

The adjourned meeting was called to order at the New Casino, 1023 Broadway, Kansas City, Mo., at 10 A. M., Monday, September 9, 1907, by Dr. S. Stewart, President.

The following members and visiting veterinarians were present: *Missouri*—Drs. H. Bradley, Windsor; S. Smith, Columbia; F. F. Brown, Kansas City; A. T. Kinsley, Kansas City; E. A. VanAntwerp, Brookfield; A. W. James, Cameron; C. E. Steel, St. Joseph; E. J. Netherton, St. Joseph; D. F. Luckey, Columbia; S. Stewart, Kansas City; L. D. Brown, Hamilton; B. F. Kaupp, Kansas City; W. Warren, Sedalia. *Nebraska*—G. J. Collins, West Point; E. F. Stewart, Beatrice; J. A. Berg, Pender; A. T. Peters, Lincoln; V. Schaefer, Tekamah; W. R. O'Neal, Wayne; Peter Simonson, Freemont. *Iowa*—S. H. Bauman, Birmingham; A. C. Woods, Council Bluffs; D. H. Miller, Des Moines. *Kansas*—Drs. W. L. Elliott, Paola; C. B. McClelland, Lawrence; T. C. McCahey, Concordia; Chas. Saunders, El Dorado. *New Jersey*—Dr. Wm. Herbert Lowe, and others.

The following names duly vouched for and favorably passed upon by the Board of Censors were elected to membership: *Kansas*—Drs. Geo. A. Hanvey, Jr., Ft. Riley; Geo. Morris, White City; B. W. Conrad, Sabetha; J. F. Hemphill, Clay Center; C. C. Walch, Burden; W. O. Rozell, Ottawa; C. W. Dunn, Paola.

Missouri—Drs. W. B. Welch, Marshall; H. C. Eliot, Nevada; G. H. Tangeman, Cowgill; B. F. Gooch, Browning; Geo. E. Butin, Kansas City; B. C. Davis, Carrollton. *Nebraska*—Drs. J. C. Bowman, Tecumseh; W. T. Pritchard, Wisner; R. E. Noyes, Hartington; C. L. Norris, North Bend. *Colorado*—Drs. C. L. Stults, Boulder; H. E. Kingman, Boulder.

A resolution was introduced to raise the dues from \$1 per year to \$2 per year, the extra dollar to go to the Publication Committee, and that each member be required to pay his dues in advance, thereby becoming a subscriber to the *Bulletin*. Any one not a member can become a subscriber to the *Bulletin* by paying \$1 per year.

The following officers were elected for the following year:

President—Dr. H. Jensen, Weeping Water, Neb.

First Vice-President—Dr. E. F. Stewart, Beatrice, Neb.

Second Vice-President—Dr. W. B. Welch, Marshall, Mo.

Secretary-Treasurer—Dr. B. F. Kaupp, Kansas City.

Censors—Nebraska, Dr. W. R. O'Neil; Missouri, Dr. W. Warren; Kansas, Dr. C. B. McClelland; Iowa, Dr. D. H. Miller, Oklahoma, Dr. W. B. McAlester.

The Censors audited the books of the Treasurer and reported same correct. The report was accepted.

Moved by Dr. H. Jensen, seconded by Dr. F. M. Starr, that the Association make good the deficit incurred in the publication of the *Missouri Valley Veterinary Bulletin*. Carried.

Dr. A. T. Peters was re-elected editor-in-chief of the *Bulletin* for the ensuing year, and the President empowered to appoint an associate editor from each State represented in the Association.

The news of the death of Dr. H. L. Ramacciotti, Omaha, Neb., was received during the meeting of the American Veterinary Medical Association and the members of the Valley Association present authorized the expenditure of \$10 for a suitable floral decoration. Dr. G. R. Young, of Omaha, was appointed to deliver same and extend the sympathies of the Association to the bereaved family.

Adjourned to meet in Kansas City, in February, the exact date to be fixed by the officers of the Association.

B. F. KAUPP, *Secretary*.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular meeting was held in Donaldson's Hall, Broad and Filbert streets, on Tuesday, October 8, 1907.

Dr. B. M. Underhill, the President, occupying the chair, and the following members responded to roll-call: Drs. Hoskins, Lintz, James A. McNulty, C. J. Marshall, Leonard Pearson, W. L. Rhoads, John Reichel, B. M. Underhill, J. W. Vansant, G. W. Hartman, D. B. Fitzpatrick, A. F. Schriber, H. B. Cox and H. G. Black. Visitors, Dr. Noack, of Reading, Pa.; T. S. Carlisle, A. J. McCloskey, H. C. Campbell, E. S. Dubler, J. J. Zilligan, W. J. Lentz, Henry Marshall, H. M. Baker, Chas. C. Schloemer, J. P. Bushong, Amos M. Anderson, Dr. Laurence (late of the 5th Cavalry, P. I.) and many students from the veterinary school of the U. of P.

Dr. Stephen Lockett was regularly elected to membership.

Dr. Leonard Pearson then spoke upon the disease, "Epizootic Lymphangitis," which had appeared recently in Western Pennsylvania. How the animals became infected is not known, and Dr. Pearson, as state veterinarian, is taking every precaution to prevent its spreading.

Dr. John Reichel described the organism which produces the disease; it is in the form of the yeast fungi—the *Saccharomyces farciminosus*. He also explained the mode of culture and of isolating the organism.

It is strongly probable that at the next meeting of the Pennsylvania State Veterinary Association Dr. Pearson will exhibit a case of epizootic lymphangitis.

This being the annual meeting at which the election of officers takes place, Dr. Pearson moved that the Secretary be instructed to cast the ballot for all the presiding officers. Seconded and carried.

Dr. Hoskins spoke of the excellent chances for the meeting of the A. V. M. A. meeting in 1908 to come to Philadelphia, and he made a motion, which was promptly carried, that a committee be appointed to persuade the Executive Committee of the A. V. M. A. that Philadelphia is the place for next year's meeting.

Dr. C. J. Marshall spoke of the success of the Work Horse Parade Association, having 650 entries and over 1,000 horses.

Dr. Pearson suggested that the Keystone Veterinary Medical Association offer a prize for each class of the city department horses, and upon a motion by Dr. Rhoads a committee was appointed to select suitable cups as prizes.

This was an excellent meeting, the room being too small to entertain so many, and we hope that each meeting in the future will be as well attended.

A. W. ORMISTON, D. V. S., *Secretary*.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Dalrymple has announced the appointment of Committees and Resident Secretaries as follows:

COMMITTEES FOR 1907-8.

Executive—W. Herbert Lowe, Chairman; M. H. Reynolds, Joseph Hughes, W. Horace Hoskins, J. G. Rutherford, E. B. Ackerman.

Publication—C. J. Marshall, Chairman; E. M. Ranck, T. E. Smith, Tait Butler, R. P. Lyman.

Finance—Thomas Bland, Chairman; C. D. McGilvray, Chas. A. McKim.

Diseases—V. A. Moore, Chairman; C. H. Higgins, H. J. Milks, J. R. Mohler, O. E. Dyson.

Intelligence and Education—Leonard Pearson, Chairman; D. Arthur Hughes, J. H. McNeil, M. Francis, S. Brenton.

Association of Faculties—G. W. Dunphy, Chairman; G. H. Berns, E. H. Shepard.

Legislation—J. P. Turner, Chairman; T. E. Budd, A. S. Cooley, C. E. Cotton, C. G. Lamb.

Necrology—A. H. Baker, Chairman; William Dougherty, Thomas Thacker, C. C. Lyford, J. F. Winchester.

Resolutions—Sesco Stewart, Chairman; A. T. Peters, E. L. Quitman, J. L. Robertson, M. E. Knowles.

RESIDENT SECRETARIES.

Alabama—Ward Giltner, Auburn.

Arizona—J. C. Norton, Phoenix.

Arkansas—R. R. Dinwiddie, Fayetteville.

California—P. H. Browning, San Jose.

Colorado—Mark White, Denver.

Connecticut—G. W. Loveland, Torrington.

Delaware—H. P. Eves, Wilmington.

District of Columbia—B. T. Woodward, Washington.

Florida—J. G. Hill, Jacksonville.

Georgia—W. A. Scott, Columbus.

Hawaii—W. T. Monsarrat, Honolulu.

Idaho—C. R. Behler, Nampa.

Illinois—L. A. Merillat, Chicago.
Indiana—J. W. Klotz, Noblesville.
Iowa—G. A. Johnson, Sioux City.
Kansas—C. H. Jewell, Fort Riley.
Kentucky—D. A. Piatt, Lexington.
Louisiana—M. M. White, Shreveport.
Maine—A. Joly, Waterville.
Maryland—F. H. Mackie, Baltimore.
Massachusetts—B. D. Pierce, Springfield.
Michigan—J. Black, Richmond.
Minnesota—G. E. Leech, Winona.
Mississippi—J. C. Robert, Agricultural College.
Missouri—J. M. Phillips, St. Louis.
Montana—A. D. Knowles, Livingston.
Nebraska—H. Jensen, Weeping Water.
Nevada—J. O. Jacobs, Reno.
New Hampshire—L. Pope, Jr., Portsmouth.
New Jersey—J. P. Lowe, Passaic.
New Mexico—F. L. Schneider, Albuquerque.
New York—W. H. Kelly, Albany.
North Carolina—A. Fisher, Charlotte.
North Dakota—L. Van Es, Agricultural College.
Ohio—J. V. Newton, Toledo.
Oklahoma—J. G. Steele, Oklahoma City.
Oregon—J. M. Creamer, Portland.
Pennsylvania—S. H. Gilliland, Marietta.
Philippine Islands—G. E. Nesom, Manila.
Porto Rico—T. A. Allen, San Juan.
Rhode Island—K. G. Cherrington, Providence.
South Carolina—L. Friedheim, Rock Hill.
Tennessee—M. Jacob, Knoxville.
Texas—J. W. Parker, San Antonio.
Utah—N. G. Spaulding, Provo.
Vermont—Robert Weir, Rutland.
Virginia—J. Spencer, Blacksburg.
Washington—S. B. Nelson, Pullman.
West Virginia—L. N. Reefer, Wheeling.
Wisconsin—W. H. Perrigo, Milwaukee.
Wyoming—A. W. Whitehouse, Laramie.

Canada.

Alberta—J. C. Hargrave, Medicine Hat.
British Columbia—S. F. Tolmie, Victoria.

Manitoba—F. Torrance, Winnipeg.
New Brunswick—D. McCuaig, Moncton.
North-West Territory—J. F. Burnett, Macleod.
Nova Scotia—W. H. Pethick, Antigonish.
Ontario—J. H. Tennent, London.
Quebec—A. A. Etienne, Montreal.

Cuba.

Cuba—N. S. Mayo, Santiago de las Vegas.

South America.

Argentine Republic—Pedro L. del Carril, Buenos Ayres.
Uruguay—D. E. Salmon, Montevideo.

Australia.

South Australia—J. Desmond, Adelaide.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

The October meeting was held in the lecture-room of the New York American Veterinary College on the 2d. Owing to the indisposition of President Bell the vice-president, Dr. Chas. E. Clayton, presided.

After the usual routine business was disposed of, Dr. Ray W. Gannett, of Brooklyn, read a paper on "Resection of the Flexor Pedis Perforans Tendon for Infected Navicular Bursæ." The essayist had the data from a large number of cases operated upon which showed a very large and encouraging percentage of recoveries. Dr. Gannett advised early operation in such cases and was of the opinion that a large number of failures reported by others was due to the fact that the operation was delayed too long and that an open joint complicated the affection. This paper was freely discussed by Drs. Darke, Grenside, Gill and others.

Dr. J. L. Wilder, of Brooklyn, was next called and presented a case report of a "Horse Breaking Down in All Four Fetlocks Simultaneously." This proved to be a very interesting case and many of the members present related their experiences with such cases.

Dr. F. C. Grenside presented a paper on "Hitching in Horses,"* which was listened to with great interest. He recited the causes producing this annoying gait, especially in show

*Published elsewhere in this number.

horses, and also discussed the measures to be taken for its correction. The doctor contended that if the "hitching" was not produced by a pathological lesion, and if the animal did not "hitch" while being led to halter, the condition should not be considered an unsoundness. The discussion of Dr. Grenside's paper was general, Drs. Gill, Ellis, Mangan, Darke, Berns and others contributing their views on the subject.

A hearty vote of thanks was extended to Drs. Gannett, Wilder and Grenside for their contributions.

For the November meeting Dr. V. A. Moore, of the New York State Veterinary College, Ithaca, N. Y., will be with us and will present the story of the famous "Smoke Suit in the Deer Lodge Valley of Montana" from its pathological viewpoint.

Several case reports by members will also be presented, and an interesting meeting is assured.

W. REID BLAIR, *Secretary*.

YORK CO. (PA.) VETERINARY MEDICAL ASSOCIATION.

This association held a very successful meeting in the parlors of the National Hotel, York, Pa., on Tuesday, September 10. There were a large number of the veterinarians of the county present.

Dr. E. S. Bausticker read a paper on "Spasmodic Contractions of the Diaphragm in Horses," and also one on "A Complicated Case of Pneumonia and Glanders." Dr. M. H. Gladfelder, of Paradise, presented a paper on "Encephalitis." A general and valuable discussion followed the reading of these papers.

Next meeting at York, December 3, at 1 P. M.

E. S. BAUSTICKER, *Secretary*.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting will occur at Chicago, Tuesday and Wednesday, December 3 and 4, the selection being made on account of the International Live Stock Exposition, when the veterinarians may take advantage of whatever special railroad rates may exist in consequence. President Barr extends a hearty invitation through the REVIEW for all graduate veterinarians to meet with them, assuring them that indications point to the best meeting ever held by the association.

NEWS AND ITEMS.

DR. W. A. BOUCHER has removed from Fullerton, Cal., to Pasadena, Cal.

PRINCIPAL H. T. PEASE, of the Punjab Veterinary College, Lahore, India, has resigned to accept appointment as Inspector-General of the Civil Veterinary Department.

DR. FRED. B. HADLEY has resigned as inspector of the B. A. I. at St. Joseph, Mo., and has been appointed an instructor in the veterinary department of the Washington State College at Pullman.

M. VACLEY KOTLAR, veterinary surgeon, has been elected to the Austrian Chamber of Deputies, at Vienna, it being the first occasion upon which a veterinarian has been thus honored in Austria.

DR. W. P. BARNES, Dennisport, Mass., in renewing his subscription to the REVIEW, says: "I do not need to take account of stock to say I got the worth of the money invested in my subscription last year."

DR. ELBRIGE C. SWITZER, Springfield, Mass., was kicked in the head by a horse he was treating on October 9 and died the following day at the Springfield Hospital. He had sustained a fracture of the skull and did not regain consciousness.

F. R. WHIPPLE, M. D. V. (McK., '02), has been appointed veterinarian in the West Virginia University, and has assumed full charge of the Veterinary Department, succeeding Dr. James A. Waugh, who has resumed active practice in Pittsburg, Pa.

MRS. W. J. GUILFOIL, wife of Dr. W. J. Guilfoil, of 1106 North Fifth street, Kansas City, Kansas, and son Jack, who have been visiting the doctor's parents and brothers in Auburn, New York, for the past two months, will leave November 1 for Union City, Ind., where they will make an extended visit with Mr. and Mrs. D. F. Kreider, the parents of Mrs. G.

DR. L. VAN ES, veterinarian of the Government Agricultural Experiment Station of North Dakota, is the author of Bulletin 77 on "Bovine Tuberculosis." It gives to stockmen, breeders and

dairymen the latest and most reliable information upon this disease in cattle, and it will undoubtedly do good service in spreading rational views that may in time be of great assistance in its eradication. It is well illustrated.

MAX SMALLFIELD, N. Y.—A. V. C. '08, of New York City, who had during his vacation acted as assistant to Dr. Charles E. Clayton, died in a New York hospital September 29. His case was diagnosed as typhoid fever, and he was treated for that disease until shortly before his death, when suspicious ulcerations began to break out over his body. A post-mortem failed to confirm the diagnosis of typhoid and a bacteriological examination revealed the cause of death as "farcy."

A VETERINARIAN IN THE BREACH.—Recently there was a tuberculosis exhibit in the City Hall of Lawrence, Mass. Rooms were furnished to illustrate the proper arrangements for tuberculous patients, and others to show how they should not be furnished. Models of sanatoria were on exhibition and many other educational features were provided. At the last moment the lecturer telegraphed that he could not reach Lawrence that evening. The hall was filled with people and a substitute had to be secured in a moment. Dr. John F. Winchester, the well-known veterinarian, was hurriedly sent for, and the local newspaper says that he acquitted himself so well that he was the recipient of compliments from all sides.

THE PHILADELPHIA WORK HORSE PARADE.—One of the most successful parades of work horses occurred in Philadelphia on October 16, under the auspices of the Pennsylvania Work Horse Parade Association, recently organized by the veterinarians of that city. The officers are: President, Dr. Leonard Pearson; First Vice-president, Dr. H. B. Cox; Second Vice-president, Dr. S. J. J. Harger; Treasurer, Dr. W. Horace Hoskins; Secretary, Dr. C. J. Marshall; Board of Governors, Drs. John W. Adams, H. B. Cox, S. J. J. Harger, W. Horace Hoskins, Henry Jarrett, C. J. Marshall and Leonard Pearson. The association has a long list of subscribers, members, patrons and patronesses, and will undoubtedly give an annual exhibit. This year it was a success from every point of view, there being over one thousand animals in line, and the streets were lined with throngs of enthusiastic spectators.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Jan. 9, 1908.....	Trenton.....	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	1st Tu. Feb.....	Hartford.....	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	Sept., 1908.....	Utica.....	B. K. Dow, Williamantic.
New York S. V. M. Soc'y.....	Dec. 18, 1907.....	Reading.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	Monthly.....	Paterson, N. J.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call Exec. Com.....	Boston.....	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Monthly.....	Boston.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	.....	.....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n.....	.....	.....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	Feb. 4-5, 1908.....	Ottawa.....	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	April, 1908.....	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	Dec. 3-4, 1908.....	141 W. 54th St. Chicago.....	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	.....	.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	Not stated.....	Decatur.....	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	July 2-3, 1908.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	.....	Raleigh.....	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	1st Wed., Oct.....	141 W. 54th St. Columbus.....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	Jan. 14-15, 1908.....	Pittsburgh.....	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	1st Wed. ea. mo.....	.....	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n.....	.....	.....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	January, 1908.....	Rochester.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	.....	.....	J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	2d Wk. Th. Jan.....	St. Paul.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	March, 1908.....	Philadelphia.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	Monthly.....	Philadelphia.....	F. H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	.....	.....	A. W. Ormiston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n.....	Feb., 1908.....	Denver.....	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	June and Dec.....	Kansas City.....	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	.....	Providence.....	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n.....	.....	San Francisco.....	C. H. Martin, Valley City.
California State V. M. Ass'n.....	.....	.....	C. M. Haring, U. C., Berkeley.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy. Oct.....	Los Angeles.....	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	Oct. 16, 1907.....	Omaha.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	Jan. 2-3, 1908.....	Manhattan.....	Hans Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	1st and 3d Thur. of each month.....	Lec. Room, Laval Un'y, Mon. and Que.....	Hugh S. Maxwell, Salina.
Ass'n Médécalle Veterinaire Française "Laval".....	Nov. 19, 1907.....	Not decided.....	J. P. A. Houde, Montreal.
Province of Quebec V. M. A.....	Monthly.....	Pullman, Wa.....	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	An'l, Jan., '08.....	Indianapolis.....	D. A. Piatt, Lexington.
Washington State Col. V. M. A.....	.....	.....	Wm. D. Mason, Pullman.
Indiana Veterinary Association.....	2d Thu. ea. mo.....	St. P.-Minneap.....	E. M. Bronson, Indianapolis.
Louisiana State V. M. Ass'n.....	Xmas week.....	Auburn, Ala.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	June, 1908.....	Philadelphia.....	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n.....	.....	.....	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	.....	.....	C. L. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn.....	.....	.....	B. T. Woodward, Wash'n, D. C.
Virginia State V. M. Ass'n.....	.....	.....	S. C. Neff, Staunton.
Oklahoma V. M. Ass'n.....	.....	.....	W. H. Martin, El Reno.
Veterinary Practitioners' Club.....	.....	.....	A. F. Mount, Jersey City.
Vet. Ass'n Dist. of Columbia.....	.....	.....	F. M. Ashbaugh, Wash., D. C.
B. A. I. Vet. In. A., Chicago.....	.....	.....	J. Madsen, Chicago, Ill.
Arkansas Veterinary Society.....	.....	.....	B. H. Merchant, Little Rock.
York Co. (Pa.) V. M. S.....	.....	.....	E. S. Bausticker, York.
Philippine V. M. A.....	.....	.....	R. H. McMullen, Manila.
Montana State V. M. A.....	C. H. H. Sweetapple, Fort Saskatchewan, Alta., Can.
Veterinary Ass'n of Alberta.....

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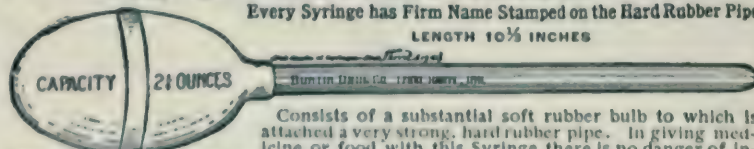
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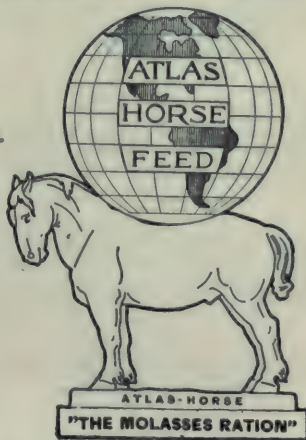
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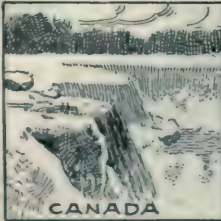
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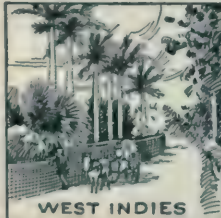
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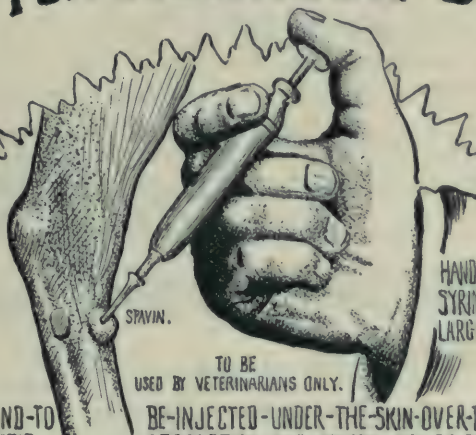
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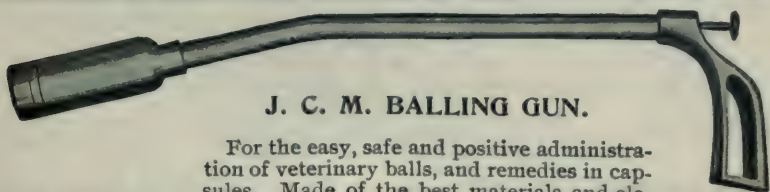
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AMERICAN VETERINARY REVIEW.

DECEMBER, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, October 15, 1907.

CUTI AND OPHTHALMO-MALLEINATION.—The very concise remarks that I made last month in reference to the experiments made by Mr. Martel with cuti and ophthalmo-malleination have merely made known the conclusions to which this experimenter had arrived in trying the new method. But there are points in the observations made by Martel which cannot be overlooked and which one may derive himself by referring to the details of the report which was presented at the Société Centrale at the beginning of last July. I may be allowed to resume some parts of it.

It seems that fourteen years ago Mr. Martel had contracted glanders, while working at Pasteur Institute. The infection had begun by pneumonia of the left lung and he had phlebitis of the internal saphena, accompanied by a large abscess of the calf of the leg. A glanderous lymphangitis with ulceration, undermining suppuration, fistulæ and adenitis of the lymphatic glands of the groin, were the manifestations that lasted nearly eleven months. The pus from the abscess was examined at the laboratory of Nocard and that of the Inspectors of Meat. The bacillus of glanders was found in both cases. There was no doubt about the nature of the trouble.

In carrying out his last experiments on the cuti-malleination and to see its value in the diagnosis of the disease in man as well as in animals, Martel thought that he would try it on himself, and on his left forearm he made slight scarifications, which

were coated over with mallein diluted in carbolic acid. He also scarified his right arm, but left these as control without mallein applications. He also applied the same test on ten other persons that never had had glanders, in six with dilution to 1-10 and in four with dilution to the quarter. The dilutions were made in sterilized water.

The experiments on these ten persons were negative—a superficial redness, which subsided in a few days, and nothing else was observed.

* * *

On the person of the experimenter it was different. On his left arm the cuti-malleination had given quite a reaction after



FIG. 1.

twenty-four hours. On the second day there was swelling and slight hypersensibility with great itching. Between the second and the third day the reaction had reached its highest point, there was a slight oozing of citrine serosity. From the third to the fourth day the swelling and redness subsided. Desquamation began on the fifth day. The skin remained highly colored

for several weeks after. The scarifications of the right arm presented nothing peculiar. The result was negative.

In another similar operation Mr. Martel experimented upon himself again and the results were like the first, a marked cuti-reaction.

This case is illustrated with the three accompanying views.

Fig. 1 shows the cicatrices of farcino-glanderous infection on the legs of Mr. Martel, after twelve years recovery.

Fig. 2. This shows the effects of cuti-malleination with carbolized mallein to 1-10, taken on the tenth day.



FIG. 2.

Fig. 3. View of the second malleination with pure mallein. Photography taken at the forty-third hour.

* * *

Besides the experiments made upon himself, others were also carried out on other human beings. On a man who had been working in a rendering establishment, and had contracted glanders, diagnosed with bacteriologic examination, only a slight cutaneous reaction was obtained. Another man, suspected only, but with no bacteriologic diagnosis, gave no reaction. A third, who had recovered from a lymphangitis of glanders, contracted in 1884, or twenty-three years before, a strongly marked cuti-reaction was obtained.

Fig. 4 shows cuti-reaction with brute mallein in this last case. The photography was taken at the forty-second hour. The two scarifications of the middle were coated with mallein.

Fig. 5 shows the same cuti-reaction on the seventh day. Most of the scabs formed are still adherent. Some are falling off. the œdema and redness are gone. The two other scarifications are nearly all gone.

* * *

In the same number of *Hygiène De La Viande Et Du Lait*, from which the above are extracted, Mr. Martel has reviewed a large number of experiments which he has made on horses with

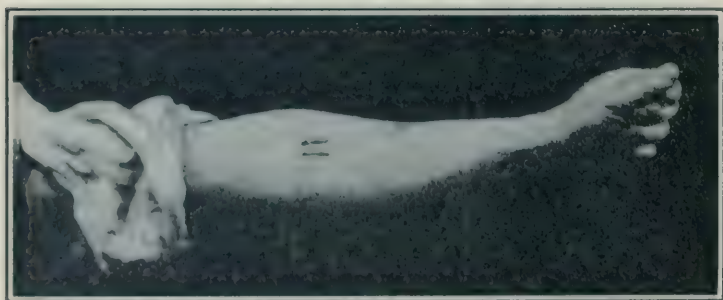


FIG. 3.

the cuti and ophthalmic-reactions, employed alone or associated with the sub-cutaneous malleination, and has thus resumed his observations:

In man, *cuti-reaction is well marked in individuals affected with severe and recovered glanders, even after a very long time (12, 13, 23 years).*

In horses, *cuti and ophthalmic-malleination, although not so easily applied as ordinary malleination, deserve to be resorted to with this last.*

All horses seriously affected with glanders (with or without symptoms) give marked reaction to the various methods of malleination.

Horses that have recovered from glanders, but have been reinfected, give most generally marked reaction to cuti-malleination; all react with ophthalmomalleination.

Ophthalmomalleination is more frequent than cuti-reaction in horses slightly affected, those that have recovered or are on the way to recovery.

And finally, as conclusions, he says:

“Ought to be considered as affected with glanders all horses that present painful and lasting œdema with lymphangitis extending from the sub-cutaneous swelling of the neck and running towards the lymphatic glands of the entrance to the chest.

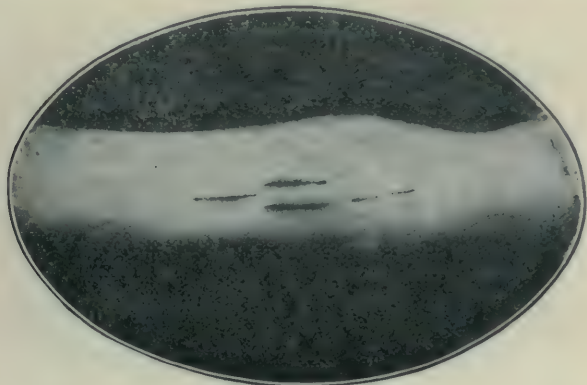


FIG. 4.

whether there is an elevation of temperature or not (ordinary malleination), with or without cuti and ophthalmomalleination; and as recovered all animals which having no thermic reaction nor any œdema at the point of the sub-cutaneous injection of mallein and gives, nevertheless, ophthalmomalleination with or without cuti-reaction.”

* * *

PROTHESIS OCULARIS is an operation which veterinarians seldom resort to, I believe, and yet the indications for its application are quite numerous; whether it is on account of severe traumatism, of injuries of the globe or of neoplasms, enucleation

is often the only means by which an ugly deformity and great suffering to the animal may be relieved.

Notwithstanding this enucleation, there remains another condition which prothesis alone can remedy—an ugly depression at the orbit and an unsightly retraction of the eyelids.

Prof. Dr. Pietro Ghisleni, of the Veterinary University of Bologna, has recently published in the *Clinica Veterinaria* an article on a comparatively new method, in veterinary surgery at least, where he recommends the use of injections of vaseline in the orbital cavity to avoid the bad results of the removal of the whole globe of the eye.

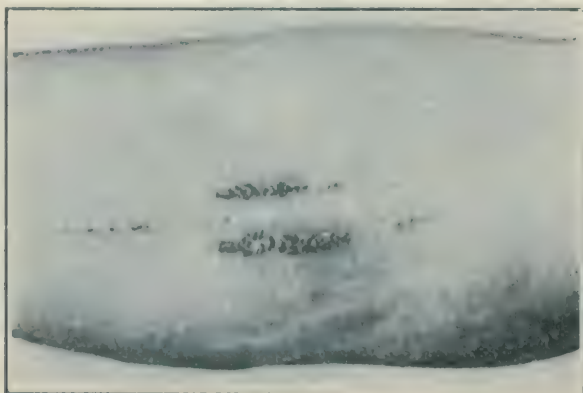


FIG. 5.

First the author passes in concise review the attempts which have been made in that direction. Alluding to the case published by Chapart in 1829, he recalls the processes patronized by Bayer, Schede, Schmid, Bauer, Hertwig, Trasbot, Zundel, Vachetta and many others, and criticises the attempts which have been made in the use of artificial means, such as the filling of the orbital cavity with balls of cement, of bone or ivory, and again the artificial eye made of glass, of gutta serena, of rubber, of horn, which, if they present some advantages, have also many inconveniences.

In 1902 Director Baldoni was the first to resort to the method of Gersuny, consisting in injections of vaseline, and

under his direction Ghisleni undertook a large number of experiments and operated with such success in all the cases that came before him. and with such superior advantages to the use of the artificial eye, that he became very desirous to present it to the profession at large.

* / *

The technic of the operation is very simple and can be resumed as follows: The ocular globe being enucleated, the orbital cavity is dressed antiseptically, daily, for eight or twelve days, care being taken that it be filled with sterilized gauze in such a manner as to keep the eyelids rather raised outward. When the suppuration has entirely stopped the edges of the eyelids are scarified, and when complete hæmostasis has taken place and the orbit is well washed with alcohol, blepharorrhaphy is performed and the eyelids well brought together. Then introducing at either angle, the temporal or the nasal, the needle of a syringe, kept in a water bath at 40 degrees C. and filled with pure white and sterilized vaseline, its contents are pushed into the orbital cavity. To distend and raise the eyelids, the quantity of vaseline required is between 15 and 25 c.c. for a horse of medium size and of 7 to 15 for a dog. Immediately after the injection, it is well to cool off the seat of the operation; pulverization of ether promotes the consolidation of the vaseline. As an additional precaution and to avoid the possible escape of vaseline between the eyelids, Baldoni has suggested that a little piece of the conjunctival coat of the inside of each lid be carefully excised and the two bleeding surfaces brought together with stitches. This additional step has the advantage of allowing the margins of the eyelids to be more free and of saving the glands of Meibonius.

The complete cicatrization of the operation takes place in about ten days. In some cases 2 or 3 c.c. of vaseline have to be injected again by puncture made through the centre of the upper or the lower eyelid. Some times paraffine is added to the vaseline so as to make the material harder, but Ghisleni prefers not.

With this prothesis ocularis none of the inconveniences of the use of the artificial eye exists. It is a simple method at the disposal of every one; it can be applied to any animal, and by the retraction and depression of the eyelids are avoided, and consequently much of the ugly deformity resulting from the enucleation of the eyeball.

In conclusion, Prof. Ghisleni records as illustrations and with figures, (1) a case of primitive sarcoma following traumatism in a mare, which was operated by this method, and in which the result left nothing to desire; (2) that of a dog, which had an enormous protrusion of the right eye with staphyloma of the cornea and parenchymatous keratitis. After recovery the appearance of the dog was most satisfactory, without the slightest deformity; (3) that of a dog which, after a fight with another dog, had a complete prolapsus of the left globe with laceration of the cornea. Treated with the injection of 7 c.c. of vaseline in the orbital cavity and of 1 c.c. in each lid afterward, the result was also excellent and proved most satisfactory.

It is certain that the method patronized by our *confrère* in Italy is deserving of trial by those who may meet cases of injuries of the eye that may require the complete removal of the organ.



CANCERS IN ANIMALS.—Professor Cadiot is a prolific writer, and, notwithstanding the numerous occupations that his many scientific positions impose on his everlasting energy, he finds now and then time to give the profession some excellent articles, or reviews, on surgical subjects which are of great interest to those who read them. One of the last published is on cancers in animals.

All animals may present tumors. If statistics seem to show a greater proportion of cancers among carnivora, it is because herbivora are more frequently killed when they are young, and, again, because it is more in adults or old individuals that cancerous growths develop.

Tumors are classified into benignant and malignant. These are characterized by their tendency to more rapid development, to become generalized and to recur. In clinics they are called cancers. Animals which are suffering with them do not seem to be under the influence of a special cachexia. According to their origin, epithelial or conjunctival, they are divided into epitheliomas and sarcomas.

The former may proceed in any of the epithelias of the organism. They are more or less typical, resembling the original tissue, and are more or less rich in connective tissue, as the scirrhus or the encephaloids. The latter, which develops in the connective tissue, are often atypical, such are lymphosarcomas. They are then ordinarily a tuberculosis lesion, as in the dog, and not a tumor. Sarcomas may develop in any part of the organism, the connective tissue existing everywhere. They have commonly a rapid proliferation and become easily generalized.

* * *

The etiology and pathogeny of cancer are still imperfectly known. Heredity scarcely has anything to do in the predisposition of one to become cancerous. The zoological species has no influence. Age is a factor in the etiology; aged individuals are more susceptible than young. Alimentation has no influence. Chronic irritations have, which is undeniable. Anomalies in the location of organs (ectopias) or of tissues (cellular heteropias) may be the causes of tumors (dermoid, teratomas), but very probably do not promote the growth of malignant tumors. Contagiosity of cancers seems possible, in a more or less immediate way; there are no cases of it in domestic animals, nor in man, but the infection and special contagion of the cancer of mice is undeniable. Experimentally, the attempts of transmission of cancer from animals to subjects of the same or of different species are not to be counted. Positive results do not exist except for the cancer transmissible from mouse to mouse. Sticker has demonstrated the inoculability of some sarcomatous tumors of

the penis of the dog, by coit, subcutaneous or intraperitoneal inoculations. But the nature of these tumors is doubtful, especially after the researches made by Borrel.

* * *

The pathogeneus theories of cancer can be classified into the following groups: *Diathetic theory*, in which by special diacrasia the organism in the presence of common irritations may give rise to cancerous reaction. *Theory of Heterotopy*, which explains the genesis of tumors by the development of cells normally closed during embryonary life. It explains only a very limited number of cases. *Cells Theory*, where it is supposed that one or several cells acquire excessive and disordinate proliferating properties after an abnormal fecundation of two elements. *Parasitar Theory*, which assimilates carcinosis to infectious diseases due to an exogenous micro-organism. There exists great resemblance between infection and cancer, but the theory is in fault when it must explain why the secondary localizations of a generalized tumor resembles all to the initial growth, whatever may be their seat. It must be said that one may suppose the casual agent as giving rise in the cell to peculiar proliferating properties, which render it infecting for the organism; consequently, two steps in the pathogeny of cancer, transformation of the biology of certain cells by the exogenous agent and then parasitism exercised by the generations issued from these cells. The incriminated initial agent is unknown. Microbes (*Micrococcus neoformans* of Doyen), various sporozoar, ferments—have been accused without predominating evidences.

Actually many accept the parasitic theory. Whatever the parasite may be, special or peculiar circumstances promote its action (senility, syphilis and use of tobacco for man) ; soil and germ are not independent factors.

The prognosis of cancer is always serious and the treatment specially surgical.

ELECTRIC SLEEP.—In one of our medical contemporaries, the *Presse Medicale*, one of the professors of the School of Medicine of Nantes, Mr. Stephane Leduc, has published an article which justifies the title of a review made by Prof. G. Petit of Alfort. This title is "Anesthesia in Animals with Electric Sleep."

Under the name of electric sleep, Prof. Leduc has designated a condition, analogous to that produced by chloroform, "Chloroformic sleep," and which is the result of the action of a certain electric current upon the brain. This current, which is "intermittent, with low tension and constant direction," is obtained by a special apparatus.

According to Prof. Leduc, and contrary to what was believed previously, the brain is of all deep organs, the most accessible to electric currents. For instance, to put a dog to sleep, the top of the head is shaved close, it is covered with hydrophile wadding moistened with a 1/100 solution of chloride of sodium. An electrode attached to a conductor is fixed on the wadding. The second electrode is secured in the same manner, either on the posterior part of the back or the inferior of the thorax, according to the effect that one wishes to obtain. The first electrode is connected with the negative and the second with the positive pole.

Under the influence of the electric current, sent with some peculiar precautions, one observed first, as in any general anæsthesia, a period of excitation, which is followed by cerebral inhibition, analogous to chloroformic sleep, with the exception of the preservation of reflexes, specially if the spinal cord is not on the tract of the current, the animal does not react to any excitation, he seems to be in a state of absolute general anæsthesia. *All kinds of operations can be performed on the patient, and it will not react any more than an animal in a deep chloroformic sleep.*

* * *

When one knows the voltage which is necessary, if it is introduced instantaneously in the current, the inhibition is sudden.

The animal drops stiff, but after a few seconds the respiration returns. As soon as the current ceases, the animal wakes up in an instant. "Most often," says Leduc, "the animal gets up immediately, looks quietly round him, manifests no pain, no fright, no fatigue and once the electrodes are removed, he jumps and moves freely and eats whatever is offered to him. There never is any consecutive effects, such as vomiting. Evidently there has been no pain endured or felt, as the animal has not shown any evidence of it, he has no fear and is as friendly after as before. He does not rebel against other preparations for another operation. In other words, it seems perfectly indifferent to what has been done."

The electric sleep is then a question of voltage, which, if too strong, would produce electrocution. This is the danger. But if it occurs, Leduc gives a method to bring back to life those animals in a state of apparent death—in using the same current which has killed them. This method consists in leaving the current pass at short intervals, then stop it, taking as a guide the respiratory rhythm of the function of the muscular contraction thus produced, to realize artificial respiration.

Electric sleep can be kept up for several hours without any inconvenience.



As complements to the statements made by Prof. Leduc, two other experimentors, MM. Tuffier and Jardy, have tested the value of the method to make it take the place of general anaesthesia, which is so often dangerous to animals, and they have demonstrated that electric sleep given to dogs produced a long and lasting absolute anaesthesia, without any danger and with perfect security.

They have experimented on seven animals, that have been submitted to several seatings of anaesthesia, one among them has had several operations performed upon him—all, in fact, having been submitted to operation, such as those that are generally followed by nervous shock, and yet ALL have had an instan-

taneous wakening, got up from the operating table, walked and even ran after the operation. The operation to which these dogs were submitted were gastro-enterotomy, pylorotomy, pancreatotomy, cholecysto-enterotomy.

The conclusions are that electricity is an anæsthetic of first order and free from any danger. They add: "If the intensity of the current is too strong, generalized contractions appear and respiration stops, but the heart remains normal; reduce the strength of the current and immediately the normal respiratory rhythm will return."

The important question now is: Can this original and curious mode of anæsthesia enter into daily veterinary practice? Experience alone will answer.

* * *

I have not been favored with many publications from the other side of the big pond this month, but still feel thankful to those who have sent me copies of their work. Among them I may mention first, from the Department of Agriculture, Bureau of Animal Industry, three numbers of the index catalogue of Medical and Veterinary Zoölogy, by C. W. Stiles and A. Hassall, and then Circular 114, on "Sanitary Milk Production." From the Chief of the State Board of Agriculture of Massachusetts, Dr. A. Peters, the tenth semi-annual report; the July number of the *Transvaal Agricultural Journal*, where Dr. Arnold Theiler and C. E. Grady continue their excellent article on diseases of stock not referred to in the Contagious Diseases of Animals Act. The report of the Chief Veterinarian, Dr. J. G. Rutherford, M. V., report addressed to the Secretary of Agriculture of Canada. The peculiar fact that the same is printed in French has rendered the reading more pleasant to me, besides the numerous interesting facts that it contains. From the newly-elected President of the A. V. M. A., Dr. Dalrymple, the last conclusion of his experiments on bare-lot *vs.* grass-lot, in relation to stomachal and intestinal parasitism of lambs, which no doubt many

have read already and which have proved of sufficient interest to be reprinted in European publications. And, finally, among the announcements of several colleges for the session of 1807-1808, I also find the *Journal of the Alumni Association of McKillip* and the fourth number of the *Bulletin of the Chicago Veterinary College*.
A. L.

PHILADELPHIA IN 1908.

The Executive Committee of the A. V. M. A. has decided in favor of Philadelphia as the convention city of 1908. While the REVIEW believes and advocates that the meetings of the A. V. M. A. should be held in the Central West, so as to be equally accessible from all parts of the continent, yet there seems to be several good reasons why the 1908 convention should be held in the City of Brotherly Love.

Among these reasons may be mentioned the influence of a well-organized and powerful state association; the recent magnificent achievements of the profession of that commonwealth; the appropriation of large sums of money for veterinary education and for the carrying out of veterinary sanitary laws in Pennsylvania; the passage of the first efficient and satisfactory state meat inspection law in the land; the completion of the new buildings of the veterinary department of the University of Pennsylvania, equipped with every facility and apparatus for the teaching of veterinary medicine along modern scientific lines, and last, but not least, is the earnestness and the cordiality of the invitation extended to us by the progressive and loyal sons of Pennsylvania.
W. H. L.

RECENT DATA IN VETERINARY SURGERY.

In this issue of the REVIEW our distinguished colleague, Prof. L. A. Merillat, of the Chicago Veterinary College, commences a review of the more recent thoughts, theories and discoveries in veterinary surgery.

It is his intention to review the whole field of medical research wherein it concerns veterinary medicine, especially surgery, and conclude some months hence with a discussion of all our standard surgical manipulations, with especial reference to their real value, new methods of performance, new instruments and new surgical drugs.

Such an epitome of recent veterinary knowledge cannot help being of much practical value and usefulness to the busy practitioner, who has not the time to wade through long heavy papers to assimilate their contents.

W. H. L.

STATE MEAT INSPECTION SERVICE.

The first state in the union to enact anything like an efficient and satisfactory meat inspection law is Pennsylvania. This law is the result of the work of a powerful state organization, under able and wise leadership.

Circular No. 7 of the State Live Stock Sanitary Board of Pennsylvania, just issued, contains the rules and regulations which have been formulated and are now promulgated for the government of the meat hygiene service in that commonwealth, as authorized by act of the Assembly, approved May 25, 1907.

Ten agents of the Board have been appointed in the meat hygiene service, each at an annual salary of \$1,800 and traveling expenses. State Veterinarian Leonard Pearson may well be congratulated on his accomplishments, for the agents are all qualified and capable veterinarians of good standing in the profession.

The necessity for an adequate and efficient state and municipal meat inspection service is now being emphasized in the enforcement of the Federal regulations governing meat inspection.

Small packers have found it more profitable to forfeit their interstate trade rather than maintain a proper standard of sanitation, discontinue the use of prohibited preservatives and stand the loss incident to the condemnation of diseased animals and unwholesome animal food products.

W. H. L.

EXPERIMENTS AT THE ROCKEFELLER INSTITUTE.

It is announced by the Associated Press that the results with dysenteric antitoxin at the Rockefeller Institute for Medical Research, in immunizing animals have been so successful as to lead to the hope that this may prove of value in the cure of dysentery in man.

Reports of this kind emphasize to the veterinary scientist how much more knowledge could be brought to light and demonstrated that would be of inestimable value in the protection of human health and life, as well as in the alleviation of human suffering, if a properly equipped veterinary college, with a faculty of veterinarians especially educated and trained for this kind of research work had at its disposition millions of dollars, as is now available at the Rockefeller Institute.

From the veterinary medical point of view it seems quite as absurd for a doctor of medicine (human medicine) to undertake research work that is primarily and essentially veterinary work as it would be for a veterinarian to undertake to do work of a similar character appertaining to the human system.

Furthermore, it ought not to take any argument to demonstrate that the competent veterinarian, with his special training in comparative medical science and his knowledge of animals and animal life and habits, is better qualified and, therefore, more competent to conduct animal experimentation and demonstration than a medical man, educated from the standpoint of human medicine.

We submit that this matter, from the above point of view, might be presented to the Oil King for his consideration.

W. H. L.

"THE REVIEW continues to get better each year, and I consider each copy worth the price of the year's subscription. I have no doubt but what there is moss growing on the backs of those veterinarians who do not read it."—(*N. I. Stringer, Sec., Ill. V. M. A., Paxton, Ill.*)

ORIGINAL ARTICLES.

SOME PRINCIPLES OF PATHOLOGY SIGNIFICANT IN THE CONTROL OF ANIMAL DISEASES.*

BY VERANUS A. MOORE,

Professor of Pathology and Bacteriology, New York State Veterinary College, Ithaca, N. Y.

In view of the uncertainty of the purpose of the Committee on Diseases, and in obedience to the method of procedure which it proposed, I found myself casting about for a topic of general interest to the profession and possessed of sufficient importance in itself to be considered on this occasion. While engaged in this search the story of the drifting seamen came sounding in my ears. Legend has it that a few sailors, as a result of a storm, were left drifting on a raft. After days of watching they sighted a vessel and signaled for help. The reply came in the form of a question, "What do you want?" "Water," was the response of the thirsting sailors, to which the answer came, "Dip down where you are." At this one of the suffering men took up a handful of water and found, much to his surprise, that it was fresh. They had drifted into the mouth of a great river and were dying of thirst on the surface of a sea of sweet water. This reminder of the immediate resources of the practitioner in the rapidly increasing technical knowledge of diseases suggested that a part of the report of this Committee might deal with the application of a few principles of pathology to the handling of those diseases and morbid processes which we are all striving to master. I have sometimes felt that in the battle with disease the members of the medical professions, both comparative and

*A part of the Report of the Committee on Diseases of the A. V. M. A. presented at the Kansas City Meeting, September, 1907.

human, are much in the position of the sailors in the legend, in that they do not appropriate either to themselves or for the benefit of others the relief-giving aids which science has strewn round about them. My choice of this topic is in response to an irresistible desire, prompted by observation and experience, to attempt at least to bring into focus a few principles fundamental in the general warfare against disease.

The first of the principles to which I desire to call attention is that of preventive medicine. The logical conclusion drawn from the true conception of the nature of the infectious diseases is prevention. Pasteur believed that it was within the power of man to eliminate the infectious diseases from the face of the earth. To this end national, state and city governments have made special provision by legislation and appropriation, and they have profited by many successes. A student of sanitary police, however, will soon recognize that such diseases as glanders, tuberculosis and rabies, as well as many of the lesser maladies, are being allowed to spread, often extensively, because of the neglect of adequate methods for combating them. The veterinarian stands in his relation to the stock owner as does the sanitarian to the health of the community, and in this capacity he is, and justly so, held responsible by the owners for the prevention of animal plagues. The methods of prevention are varied, but of whatever kind, they are supposed to be inaugurated or at least applied by the veterinarian. I am aware that some practitioners feel that sanitary work should be looked after by others; but this indifference to become co-workers in the fight against preventable diseases by mastering the fundamental methods by which success is obtained, is causing certain of our State agricultural colleges, such as that of Wisconsin, to give special instruction in preventive medicine to their students. Knowledge is by right common property, and as live stock owners are becoming better instructed in the possibilities of prevention they are looking more and more to their veterinary advisors for counsel relative to the detection, prevention and elimination of threatening diseases.

In the United States there is over \$3,000,000,000 worth of animals, over which this profession is in charge relative to the prevention of their communicable diseases. To assist in this work our national and state governments expend, including the Federal meat inspection, more than \$4,000,000 annually. Notwithstanding this enormous expenditure, tens of millions of dollars' worth of animals are dying annually from preventable diseases. It would seem, therefore, that one of the duties, if not the first duty, of every veterinarian is to become proficient in the science of preventing diseases, especially those for which there is as yet no means of healing. Surely the success of the profession depends upon the value of the assistance its members render both to their clients and to the state in the prevention of disease.

A fundamental principle in the control of diseases is the application of methods of precision in diagnosis. In treatment, as well as in prevention, the first and most important task is making the diagnosis. Formerly this was done from the history, together with certain signs and symptoms. With the introduction of the new pathology there came certain methods by the use of which one is enabled to look deeper into the structure of morbid tissues than it is possible for the unaided eye to penetrate. Methods of precision must of necessity require the use of instruments and apparatus by which determination can be made more accurately than it is possible for men to attain without such aids. Such methods have largely been brought out in laboratory investigations and for their application it is quite generally believed that a well-appointed laboratory is necessary. In certain instances this may be true, but for the great majority of work for which they are desirable it is not so. In most cases the apparatus is simple and the method requires only the knowledge and skill that application will bring. Methods of precision are not separate and distinct from practical professional work, but valuable adjuncts thereto. A wrong diagnosis, for instance, which might lead to a very erroneous treatment, of the character of a urinary sediment or of a purulent looking substance, is exceedingly easy to make when one trusts to the unaided eye, but

it should be impossible when microscopic aid is employed. The close resemblance in the clinical appearance between abnormal growths composed of formative inflammatory tissue and certain malignant tumors often necessitates, to make the differentiation, a knowledge of minute pathological structures and of historical technique. The examination of the blood, which reveals most valuable information relative to the internal soundness of the animal—the presence or absence of anemia, the presence of suppurating lesions and of certain parasites—gives aid of the highest practical value to the clinician. This knowledge not only enlightens one on the true condition that exists, but it clarifies the treatment. For instance, iron is recognized as a remedy for anemia. It is of great value when the hemoglobin is low and the red corpuscles are normal or nearly so in number, but it is of little or no value when the red corpuscles themselves are greatly reduced. To be accurately informed in these cases requires but a little time, a reasonable training and the addition of a small equipment.

An inquiry into the loss of live stock values from disease shows great depreciation from impairment and death of animals due to the so-called general diseases and dietary disorders. These are the ailments encountered by every practitioner, and it is to reduce the losses from these causes that there is need for the application of definite scientific methods for diagnosis. A general disease or localized morbid process cannot be rationally treated unless its nature is known. It is to put the practitioner in possession of as much of this important knowledge as possible that this plea for the more general use of methods of precision is made.

Unfortunately, there is a feeling which occasionally finds expression that the finer determinations made by instruments and methods of precision are detracting from the skill of the clinician. Such views exemplify a misunderstanding of both the mission of the veterinary profession and the purpose of accurate methods for diagnosis. Such methods are not to detract from skill in detecting diagnostic signs and symptoms, but to make one more certain of his observations. They are to verify or disprove the

conclusions drawn from the physical examination. There are undoubtedly many changes taking place in making diagnoses as a result of these newer methods and they are upbuilding and dignifying the profession. We do not wish to exchange our Pullman car for the old stage-coach, nor the reaper for the sickle. We do not wish to abandon the clinical thermometer or reject the results of urine examinations to accept the guesses prevalent before their time. No one would care to trust to a diagnosis of tuberculosis in a recently infected animal without the tuberculin test or of glanders without mallein. Accuracy in the diagnosis of many morbid processes cannot be assured without the means of determination more positive than their symptomology alone suggests. Not long since I had occasion to search through the case reports in order to determine the frequency and geographical distribution of certain pathological formations. After reviewing hundreds of cases I was discouraged to find how few of them could be accepted as genuine, because of the lack of adequate means in making the determination. We are inclined to forget the weakness of opinions unless they are based on facts, and the facts determined by accurate, recognized methods. Certainly all possible assistance afforded by methods of precision could not tend to lessen the natural or acquired ability of the clinician; but, on the contrary, experience has shown that with the use of finer methods the powers of observation in clinical work have become more keen and critical than they were before. If one acquires definite information regarding one symptom he will strive more earnestly to make his knowledge of the other manifestations as definite and exact as possible. The purpose of finer methods is to increase the powers of observation. If all the present knowledge and methods were made use of, the elements of error and of accident would cause mistakes enough to occur.

As the infectious diseases are responsible for heavy losses among animals, the principle of infection is of great importance. This means simply the invasion and indwelling of the animal body by microscopic, living organisms. An inquiry into the

present knowledge of the infectious diseases shows that in their production and dissemination they are obedient to definite laws, which appear to be within the limits of human understanding. In brief, the distinguishing characters of these maladies are specific infection; a period of incubation; the nature and duration of the morbid changes; and the dissemination of the virus. These all vary, but within certain limits, according to definite laws. These laws are found in the operation of the natural forces for the spreading and means of contracting the virus; in the degree of resistance or of susceptibility of the host; and the virulence of the invading organism. They involve a knowledge of the life conditions for each of the pathogenic microbes. If one subjects the various outbreaks among domesticated animals to careful analyses according to the principles of infection they will fall naturally into two groups, one in which the casual factor is infection, the other those which are the result of dietary or other causes of a temporary and local character. The presence of an epizootic disease is a serious matter. It is of the highest importance, therefore, that when a disease apparently of a specific nature appears, that a true diagnosis be made in order that the best methods for preventing its further spread may be employed.

To make an adequate diagnosis is not always easy, but to differentiate between a specific infectious disease and some other cause, which might destroy a large number of animals, ought to be difficult. Many unsuspected agencies, capable of causing death, may creep in with the introduction of new methods of management. Some years ago, in the State of New York, there were reported a large number of outbreaks of hog cholera and thousands of swine were lost. An investigation showed that the cause of death was not a specific disease, but a poisoning due to powdered soap that was allowed to go into the swill. This illustrates one of the many effects upon animal life that may be expected from the constantly changing customs and economy of the people. Not long since I was requested to investigate a serious outbreak of a so-called infectious disease among the swine on the farm of one of our soldiers' homes. Several hun-

dred pigs had died and the diagnosis of hog cholera had repeatedly been made. An examination showed the pigs then sick to be exhibiting a great variety of symptoms, and those dead to lack the morbid changes of a known specific disease. In the swill barrel was found a number of bottles and paper boxes containing Fowler's solution, aconite, strychnine tablets, antikamnia and the like. The pigs were being fed the refuse from the hospital together with the garbage from the kitchen; and because of many deaths the disorder was pronounced hog cholera. Had the principle of infection been heeded such an error in diagnosis could not have been made. Anthrax, black leg, actinomycosis, glanders and rabies, each possessing a positive and definite means of diagnosis, are frequently mistaken, largely because definite methods are not employed.

The devious channels of infection and the multitudinous ways of its manifestation through metastasis and otherwise bring to our notice great numbers of common, but perplexing morbid processes, due to infections of various kinds and as sequellae of acute specific diseases. The work of Nocard relative to white scours in calves, of Mohler relating to the large number of lesions produced by *B. necrophorans*, and the great variety of lesions known as Botryomycosis, illustrate the importance of this phase of infection. The failure to thoroughly apply the simple precaution of proper disinfection costs this country thousands of animals annually. I was deeply impressed by the statement of a teacher of agriculture on the great extravagance of the veterinarians in permitting so many losses from common infections.

Of the laws of infection to overcome there are none more trying than those pertaining to the dissemination of pathogenic micro-organisms. The subtle powers of certain bacteria to cling to their hosts after symptoms have disappeared; the uncertainty of the period of incubation; the incipient and chronic cases; are all potent factors, often neglected, in the spread of disease. To persuade those interested in the exchange of animals that many of their losses are due to the neglect of those elements in the laws of microbial dissemination is one of the highest and like-

wise most difficult duties of the practitioner. The detection of cases in the early stages, at least before symptoms appear, is possible with certain maladies, such as tuberculosis and glanders, but with the others we must as yet depend on general principles and not specific methods.

The laws now in force in certain states demanding the application of tuberculin to all cattle admitted and the rejection of all reactors, will soon become general, and it may be followed by laws requiring this specific test of animals exchanged within the State. Such a bill came very near passing the Wisconsin legislature this last session. What is now true for tuberculosis may become the practice with glanders and possibly other communicable diseases. To meet with the highest success along these lines the veterinarian must co-operate with the live stock owner. This appears to be very important, for at the present time the agricultural colleges are making equal if not more rapid progress than the veterinary colleges in educating their students and followers in the principles of infection and methods for preventing the spread of epizootic diseases.

Attached to the great veterinary clinics of Europe one finds a chemical, bacteriological and pathological laboratory, primarily for the purpose of diagnosis, but secondarily for teaching the coming veterinarians the absolute necessity for good results of a working knowledge of the principles of infection and methods of accurate determination. It seems that a most important work for this great association is to unite in bringing into everyday practice the application of methods already known for accurate diagnosis and prevention as well as for treatment.

Since Bouchard published his lectures, there has been no more difficult pathological problem before the veterinary profession than determining the significance of autointoxication. The prominence it has gained in human pathology suggests the great importance of large quantities of unabsorbed and waste food present in the digestive tract. The recent work of Gilbert showing the dependence of many disorders on the direct or indirect action of the products absorbed from the intestine is of much

significance. Equally suggestive are the conclusions of Edgren that autointoxication is responsible for a large percentage of cases of arteriosclerosis. The work of Dawson on astheniae or "going light" in chickens is a good commentary on the effect on metabolism of the absorption of a specific microbial product. From the results ascribed to autointoxication in the production of delirium, coma and cerebral paralysis it is possible that many obscure cases of apparent cerebral or spinal trouble, especially in horses, may be traced to this cause. Cholera and eclampsia are further illustrations of the effect of the retention of products that normally are eliminated by the liver and the kidneys. In the control of disease, the organs of elimination are undoubtedly deserving of more careful attention.

The principles of immunity and vaccination are presenting many problems for the sanitarian and practitioner alike. The dread of infection and the success of certain antitoxins, such as that of diphtheria in man, and of tetanus as a prophylactic in horses, afford premises for arguments apparently logical, but in fact mere sophistry for venders of all sorts and kinds of serums, antitoxins and vaccines. There is nowhere in the realm of professional knowledge a subject which requires a keener discrimination between that which is known, that which is still experimental and that which from known laws cannot be true, than in the use of measures for producing artificial immunity. Here, again, one must depend upon principles and not upon isolated cases or coincidences.

Finally, the control of diseases among domesticated animals seems to rest largely in the hands of the individual veterinarian. He is the guardian over the flocks within his own jurisdiction. He is first to make the diagnosis and to him falls the high privilege of initiating the treatment, whether therapeutic or preventive in character. To live up to the full measure of this responsibility requires a close adherence to the principles which govern the cause, diagnosis, prevention or treatment of disease and absolute integrity in carrying out the details. To apply the principles the methods must be known. When we come to fully

appreciate the application to our individual work of the truth of the axiom that "a chain is no stronger than its weakest link," we shall have a standard by which to measure, each his own strength, in lifting the burden of disease from dumb creation and in helping to place the practice of veterinary medicine among the great and beneficent professions.

THE medical profession now has a fine opportunity to remove from the body politic in New Jersey the canker that is eating into its very existence, for, at the recent election in that state, in no less than seven cities physicians were elected mayors of their respective municipalities. We shall watch with interest municipal government administered by physicians.

AN ASTONISHING COW.—One of the most remarkable exhibits at the Show is a cow with a permanent opening in her stomach, made for the purpose of demonstrating to students of veterinary science the act of rumination. Three months ago this cow, an old animal, was about to be destroyed, but Veterinary Surgeon Desmond secured her for the purpose mentioned. He states that the operation was a perfectly painless one, and that it has had no ill effect on the cow is demonstrated by the fact that since the operation she has gained 300 in weight. On Friday morning students from the Agricultural College were lectured to on the subject by Mr. Desmond, and one of them, baring his arm, inserted it up to the shoulder into the cow's internal economy, and caught the particles of food as they came down the gullet on their entrance into the stomach. The opening, it should be said, is in the near side flank of the cow. The student also explored the second stomach, and examined its contents, the animal munching contentedly the while. Mr. Desmond states that this is the first time such an operation has been performed in the Commonwealth. The animal, in her present condition, is of immense value for demonstrating, visually, the digestive system of cows. Recently this particular cow objected to take molasses, so she is fed with it through the orifice in her flank. In fact, Mr. Desmond says that she might be entirely sustained in that manner if necessary. Throughout the day this curious, if somewhat uncanny sight, attracted crowds of people.—(*From the Adelaide Chronicle, South Australia.*)

THE RELATION OF ANTITOXINS AND VACCINES TO INFECTIOUS DISEASES.

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Presented to the Semi-Annual Meeting of the Pennsylvania State Veterinary Medical Association, at Harrisburg, Sept. 3, 1907.

The past twenty-five years has brought forth a wonderful advancement in the prevention and treatment of infectious diseases of animals by antitoxins and vaccines. It is not the intention of the writers of this paper to present to you a technical hypothesis of the relation of these products to the diseases, but to give to the practitioners of veterinary medicine a comprehensive statement of the production of the products and the method by which the results have been attained.

There are two kinds of artificial immunization, active and passive. In active immunization the tissues of the subject are induced to form antitoxins or antibacterial substances as a result of vaccination or protective inoculations. In passive immunization we inject the antitoxic or antibacterial serums, which are capable of neutralizing or lessening the action of the poisonous products of the disease. The substances used in the production of active immunization are known generally as Vaccines. These vaccines may be composed of—

1. Non-fatal inoculations of the virulent organisms.
2. The inoculation of small doses of the virulent organism into a tissue that has some natural resistance.
3. The injection of killed bacteria of the disease.
4. The injection of bacterial constituents. To this we must credit whatever immunizing or curative value mallein or tuberculin may have.
5. The injection of attenuated organisms, viruses or toxins which has given the larger number of successes.

The substances used in the production of passive immunization are known as antibacterial or antitoxic serums. In this case

an intermediate subject (the horse in diphtheria and tetanus) is highly immunized against the disease and its blood contains the antitoxic substance. An immunity can be conferred by passive immunization in a much shorter time than by active immunizations. The best results in passive immunization have been obtained in those diseases in which there is much toxin produced by the specific organism.

Lastly, we may have an immunization against a disease which is produced by a simultaneous injection of an antitoxic serum with the corresponding organism, which may be killed or attenuated in virulence, and known as a vaccine. The serum causes immediate, though temporary, resistance, and in the meantime an active, more permanent immunity develops as a consequence of the injection of the vaccine. This is known as mixed active and passive immunization.

We are most familiar with the terms vaccine and vaccination as applied to protective inoculation against small-pox. They are used, however, with equal propriety in all instances in which the attenuated or killed organisms of the disease are inoculated for the purpose of establishing resistance to an infection. The process set in motion by vaccination is such that the body cells are induced to form specific anti-bodies extending over a long period of time. Hence it is evident that the resistance in this instance is more protracted than that established by passive immunization.

The name of Jenner will always be recognized as the first to give to us a method of preventing disease by vaccination. It was in the latter half of the eighteenth century that he published the observation that dairy-maids who had contracted cow-pox showed a marked degree of immunity from small-pox. If they were not able to prevent the disease entirely, it manifested itself in a very mild form. He inferred from this that cow-pox was capable of giving immunity to small-pox. To this disease the name of vaccinia was given, and a great many people were vaccinated with the virus thus obtained, and the mortality of small-pox was greatly reduced. This theory was believed until recent years.

when it was learned that the virulent virus of small-pox when inoculated into calves was capable of producing vesicles similar to those of small-pox and not unlike those of the so-called cow-pox. It was further observed that when the virus from these vesicles was taken and re-inoculated into people that they developed a similar vesicle at the point of inoculation, which transferred to them a high degree of immunity against the disease. This immunity can be transferred from cow to cow without a marked reduction in its virulence, and is capable of conferring immunity to humankind. Even to this day the specific cause of small-pox has never been determined, yet the virulent virus of the disease can be so attenuated by the passage through the bovine species that it is incapable of producing the disease when re-inoculated into man with more than a few local symptoms. The view that vaccinia and small-pox have a common etiology appears to be the only possible one, in spite of the uncertainty as to the exact nature of the cause. To hold a different view would be to acknowledge that immunization with one kind of a microbe may confer immunity of the strongest and most specific character against another, a condition for which we could find no parallel.

It was for the immortal Pasteur to make the next discovery, that the specific cause of chicken cholera could be so attenuated that it could be used as a preventative vaccination for the disease. This was the first work in which the specific organism of the disease was attenuated in order to be used for preventive inoculations. Pasteur observed that these cultures of the bacillus of chicken cholera, if allowed to stand exposed to the light for some time, gradually became less virulent, when inoculated into fowls were incapable of producing the virulent disease, but simply a local inflammatory reaction at the point of inoculation. From this observation Pasteur worked out a system of protective vaccination in which fowls can first be inoculated with very weak, then with stronger and finally with highly virulent cultures, with a resulting protection and immunity. Unfortunately, the method is too complicated for practical use.

A discovery which was of inestimable value in the prevention of the dread disease anthrax was made by Pasteur, and is known as Pasteur Vaccine. The vaccine in this case is simply an attenuation of the virulent cultures of the organism by heat. It is necessary to give two or three vaccinations to confer a sufficient degree of immunity to withstand the infection. The first vaccine, or Vaccine No. 1, is the weakest, and is so attenuated by heat that it is capable of killing a mouse but not a guinea pig. The second vaccine, or Vaccine No. 2, is stronger and is capable of killing a guinea pig of 250 grams weight but not killing a rabbit. The third vaccine, or Vaccine No. 3, is the strongest, and is capable of killing a rabbit, but not killing a larger animal. These vaccines when once attenuated do not increase in virulence when transferred from one culture to another, nor when inoculated into and regained from the animals of the size they are capable of destroying. The method of preparing the vaccine for field use is to inoculate a tube of beef broth with a quantity of the organisms and incubate it at the temperature of the body for thirty-six hours. It is then diluted with three times its original volume of water and 1 c. c. is injected subcutaneously for preventative purposes.

The students of prophylactic measures have found that Vaccines No. 1 and No. 2 confer sufficient immunity to withstand natural infection, except in very severe outbreaks, where it is advisable to give Vaccine No. 3 in addition.

We owe to Pasteur another discovery, which has given us a preventative treatment for the dread disease rabies. Again, like small-pox, the specific organism of this disease is not known, though within recent years Negri has found in the cells of the hippocampus major (Ammon's horn) bodies of a suggestive nature. The immunity is produced by subcutaneous injections of the virus of the disease in an attenuated form, beginning with the mildest virus and going gradually up to one which possesses full virulence. This is active immunization and the attenuated virus may rightly be called a vaccine. In preparing this vaccine it is important to start with a virus of the highest virulence. As the

disease manifests itself in dogs infected naturally, it was called by Pasteur "Street Rabies," and the virus from such animals is known as the virus of "Street Rabies." It has been found by inoculating rabbits in series one from the other, we obtain a reduction in the period of incubation, until after a hundred passages the rabbits will die on the sixth or seventh day after inoculation with great certainty. Beyond this point no increase of virulence can be obtained and to this virus the name of "Fixed" was given. The spinal cord of a rabbit that has died after inoculation with the "Fixed" virus is removed, with precautions against contamination, and divided into three parts. These parts are suspended by a silk cord in a glass jar, which contains a small quantity of caustic potash at the bottom, and has two openings, one at the top and the other in its upper fourth, which are plugged with sterile cotton to allow the free circulation of air. The jar is then placed in a dark room at an even temperature of 23 degrees C. Under these conditions the infected cords lose their virulence entirely in fifteen days. Those kept for fourteen days have a slight degree of virulence and furnish the weakest virus, which is used for the first vaccination. The second vaccination consists of a cord that has dried thirteen days. The third vaccination with one that has dried twelve days, and so on until one can be used which has unimpaired virulence. We may say, however, the treatment varies slightly, according to the extent of the bites and their location. The simplest form of treatment requires fifteen days, the next eighteen, and the third, or what is known as the "intensive treatment," where the lacerations have been on the face or hands, requires twenty-one days. All we need to say in regard to the results of this treatment is that the average mortality of people bitten by rabid dogs is in the neighborhood of 16 per cent., while those that have taken the treatment at either the Pasteur Institute in France or at the twenty-five other laboratories in the world, it has been reduced to .77 of 1 per cent. This treatment is as applicable to animals as to man.

The disease known as Rauschbrand, Quarter Evil or Black Leg, is capable of being prevented by a vaccine. The specific

cause of this disease is known and is a large bacillus, and the virulence of the same is capable of ready attenuation by heat. The inoculation of animals with an attenuated culture causes a very mild infection, followed by a high degree of immunity. Kitt has shown that the dried muscles from animals dead of the disease is more efficacious for preparing the vaccine than cultures of the organism. The method of preparing the vaccine consists in inoculating a calf in the most muscular portion of the body and after it dies removing the black, spongy muscular tissue and cutting it in small pieces and drying it in an oven at about body temperature. The muscular tissue is then firmly ground into a fine powder and heated to attenuate the virulence of the bacilli contained therein. It has been found that it requires an exposure to 85 degrees C. for six to seven hours to bring about sufficient attenuation. The preventive dose for a large animal of this dried, attenuated muscle tissue is 10 milligrams, which is placed in a convenient amount of water and injected subcutaneously.

We will now direct your attention to the production of passive immunity. This is brought about by the use of antitoxins which are the result of injecting animals with gradually increasing doses of the specific organism of the disease, or again, by the bacterial toxins alone. The greatest success has been attained in the diseases of diphtheria and tetanus. The methods of producing antitoxin for diphtheria, tetanus and streptococcic infection are so nearly identical that a brief description of one will suffice for them all. The toxin is produced by growing the organism on beef broth in the laboratory incubator until they have reached the height of their toxicity. The organisms are then killed by the addition of one-half of 1 per cent. trikresol or carbolic acid, and afterward removed from the bouillon by filtration through asbestos wool and a porcelain filter. The toxicity of the filtrate is measured by determining the minimum lethal dose for a guinea pig of a definite weight within a certain time. One hundred times this amount is known as a factor of toxin. Horses are selected that are known to be free from glanders and tuberculosis by the mallein and tuberculin tests, and are injected with

a minute dose of the toxin. The dosage is gradually increased and repeated at intervals from three to four days, until the animal is able to withstand more than three hundred times the initial dose. It is the object of the operator to keep the animal under the effect of the toxin all of the time, yet not give sufficient dosage to cause any tissue injury. In this way the body develops sufficient antitoxin to neutralize a greater part if not all of the toxin. If the animal's blood is examined six or eight days after the last injection it will be found to contain an excessive quantity of antitoxin. Antitoxin is found principally in the serum of the blood, and in the case of diphtheria is capable of being precipitated by ammonium sulphate. The antitoxin is measured in units by determining the amount required to neutralize one hundred fatal doses of toxin for a guinea pig of a definite weight within a time limit.

There is some difference between the inter-relation of the toxin and antoxin in the laboratory test tube and within the animal organism. It has been found when the two are mixed together outside of the body at a given temperature and at a given concentration, the rapidity and completeness with which the union occurs depends only on the degree of affinity each one has for the other. There is no third substance with which one or the other may unite. In the body, however, the conditions are more complex; in this case two combinations are possible for the toxin, one with the antitoxin which has been introduced and a second with the tissue cells. Experiments show that quantities of toxin and antitoxin which are neutral when mixed before injection are not entirely neutral if injected in different parts of the body. In this instance some of the toxin has had time to unite with tissue cells before it could come in contact with antitoxin. The work Donitz illustrates not only the rapidity with which toxin may be bound by the tissue cells, but also the method by which antitoxin effects a cure. In relation to tetanus, he found that if toxin were injected first and the antitoxin four minutes later, a quantity of antitoxin which was largely in excess of the neutralizing dose was required to prevent the development of

tetanic symptoms; if he waited eight minutes, six times as much antitoxin; after sixteen minutes, twelve times as much; after one hour, twenty-four times the simple neutralizing dose was required. A few hours later no amount of antitoxin could save the animal. Similar conditions have been observed in the neutralization of diphtheria toxin by its antitoxin in the body, but to a less degree. These experiments give us a clear conception as to what is meant by the curative action of an antitoxin. It not only has to neutralize the free circulating toxin, but to wrest away from the cells any toxin that has been bound by them. It has been shown that it only requires to neutralize the circulating toxin the equivalent of antitoxin, but for the wresting of the toxin from the tissue cells it requires a great excess of antitoxin. When the highly toxic diseases have developed to such an extent that no amount of antitoxin will effect a cure, the relation of the toxin to the tissue cells has become something more than a chemical union. Further processes of a biologic or biochemic nature have set in in which the toxin may have become an integral part of the protoplasm. It must be remembered that the antitoxin is not capable of repairing any injury to the cells, but it plays its part by tearing away from the cell all or a part of the toxin in order that less than a fatal dose remains in the cell.

It has been difficult to explain why we should not get the same brilliant curative results from tetanus antitoxin as we have gotten from diphtheria antitoxin. In the test tube the affinity between the toxin and antitoxin of tetanus is rather weak, and it requires from forty to forty-five minutes before neutralization is complete. On the other hand, in diphtheria the affinity between the two is much stronger, and complete neutralization takes place in about fifteen minutes. Clinical experience indicates that the affinity of tetanus toxin for tissue cells is much greater than that of diphtheria. Again, the toxin of tetanus appears to have its strongest affinity for the cells of the central nervous system and those of the most vital organs. Hence a lower grade of injury may prove more serious than when the toxin is taken up by less important organs that have greater recuperative power. Furthermore, it

seems that tetanus toxin is taken up by the nerve endings and reaches the ganglionic cells by way of the axis-cylinders, whereas the antitoxin tetanus which is injected remains chiefly in the blood and lymphatic circulation. Therefore, the toxin, to a certain extent, is isolated and less accessible to the action of the antitoxin. Lastly, we have no symptoms of tetanus except those that are produced directly by the toxin, and this indicates that the body is impregnated with toxin. In diphtheria it is different, as we have a symptom of the growth of the organism in the throat during the period of its liberation of toxin before there is sufficient toxin absorbed by the system to cause derangement to the functions of the vital organs. In neither case does the organisms circulate in the fluids of the body.

We come now to speak in brief of some of the newer vaccines as well as some of those that have not given the same results as the ones we have outlined to you. The announcement by Koch some years ago of tuberculin as a cure for tuberculosis was received with much enthusiasm. It was not long, however, until it was found that its curative power had been over-estimated and a reactionary period set in in which it was used very little for therapeutic purposes. It still retained its position as a diagnostic agent. There were a number of men such as Trudeau, Pottinger and others who continued to use it in conjunction with the other treatment of hygiene, rest and food, and it has been shown by them to be of much assistance in retarding the advancement of the disease, provided it is used judiciously. Since the original tuberculin of Koch there have been many others manufactured, such as the Bouillon Filtrate of Denny and the Tubercle Residue of Koch, the watery extract of Maragliano and others. They all contain the toxins of the organism and depend upon those to produce an antitoxin within the body. There was conducted in 1900, at the laboratory of the State Live Stock Sanitary Board of Pennsylvania, under the direction of Dr. Leonard Pearson, some experiments which showed that tuberculin when given to cattle in repeated doses over a long period of time, had distinct value in

retarding the advancement of the disease as compared with controls that had received no tuberculin.

In 1902 Pearson and Gilliland published some experiments upon the immunization of cattle against tuberculosis, the immunity being produced by an intravenous injection of tubercle bacilli. The organisms used for this work were from a case of tuberculosis in man, and were non-virulent for the bovine species. The attenuation, no doubt, was brought about by long incubation in man. This method of prevention is that of true vaccination, and we obtain antibacterial as well as antitoxin immunity against the disease with the formation of anti-bodies. In tuberculin, which is only a toxin of the tubercle bacillus, we can hope for little more than an antitoxic defense. The length of this paper will not permit us to give you the results of the prevention of tuberculosis by vaccination that have been attained by the various investigators in this country and abroad, more than to say that some of the methods devised and tried are most encouraging.

In closing, we wish to say a few words about the latest vaccine of Wright, which have been called by some "Bacterins." They consist of the killed organism of the disease suspended in normal salt solution. The same is injected subcutaneously in the patient. In some of the milder infections, as staphylococci, streptococci, etc., it is claimed they have given remarkable results.

We hope that the next twenty years will yield us the same continued advancement in preventative medicine.

FIFTEEN of the Veterinary Inspectors, B. A. I., at Chicago, have formed themselves into a class for the study of pathology and bacteriology, under the direction of Prof. Maximillion Herzog. Four hours weekly are devoted to the study of the above subjects in the laboratory.

It is reported that the contemplated veterinary school at the Union Stock Yards, Chicago, which was to be a department of the State University, will not be built, the reason assigned being that the Civil Service Commission would not accept its graduates for the B. A. I.

VETERINARY INSPECTION OF NAVAL SUPPLIES.

BY D. ARTHUR HUGHES, PH. D., D. V. M. (CORNELL), INSPECTOR SUBSISTENCE DEPT., U. S. ARMY, CHICAGO, ILLS.

The saying of the Hoosier poet, James Whitcomb Riley,

"I've noticed, mor'n likely so have you,

That things don't happen when you want 'em to."

seems to find another application in the proposed inauguration of veterinary inspection of the preparation of meats and meat food products for the United States Navy. For a number of years, from the time of the starting of veterinary inspection of the preparation of meats and meat food products for the United States Army, up to the present stage of the development of that inspection system, described in my article in the REVIEW for December, 1906; that is to say, during the last six years, people have wondered why a rigid inspection, found to be necessary if army meats and meat food products were to be properly prepared, would not also be necessary in the case of similar *naval* supplies. The answer, of course, was simple as a, b, c. To assume wholesome, sound meat food products fit for food, as sharp an inspection is necessary in the preparation of naval supplies as has been in operation for six years in the case of army supplies.

Though belated, the move to establish veterinary inspection for navy meat supplies has been made. Hence the American sailor, in a few months, will have the joy of knowing that every reasonable precaution will be taken to secure for him perfectly wholesome animal foods, as has been done for six years for the American soldier. Last spring Paymaster General Rodgers, officer in charge of food supplies for the navy, made an official tour of the West, taking in such packing centres as Chicago, Kansas City and Omaha, in company with the Commissary General of the army, General Henry G. Sharp. Immediately after their return to Washington, orders were sent out to the

Purchasing Commissaries for the army in Chicago, Kansas City and Omaha, that, until such a time as a system of inspection, similar to that in vogue for the army, should be established for the navy, they, and the veterinary inspectors working under them, should assume charge of the preparation of naval stores, and that the same authority over, and care for, navy supplies should be exercised as governed in the preparation of army supplies. At present, therefore, the army inspectors have charge of the preparation of naval supplies.

However, the inauguration of veterinary inspection of supplies for the navy by its own men is not far off. Yea, it now is. Two months ago request was made to the United States Civil Service Commission that it request the United States Department of Agriculture to recommend a veterinary inspector for transfer to the Naval Department, to do service in Chicago the same as that done by the army veterinary inspectors. Accordingly, Dr. Jesse H. White, of the Bureau of Animal Industry, then located in Milwaukee, was recommended, accepted the transfer, and was ordered to report to Lieut. Col. A. D. Kniskern, Deputy Commissary General of the Army and Purchasing Commissary in Chicago, for duty under his direction. Dr. White is, at this writing, familiarizing himself with the army inspection methods and doing duty with the army inspectors, chiefly in the supervision of the preparation of naval supplies.

The appointment of Dr. White is only a step towards the full establishment of an inspection for the navy the same as that already adopted for the army with so much profit to the quality of its supplies. Undoubtedly, it is the plan of Paymaster General Rodgers of the navy to shortly institute a thorough-going veterinary inspection of the preparation of meats and meat food products for his department. The Navy, when compared with the Army, is at a disadvantage in one point. The army has a commissary office, with its corps of clerks, and a Purchasing Commissary (a regular army officer) in charge, at each of the important meat packing centres. The commissary officers, with their veterinary inspectors, can thus closely supervise the manu-

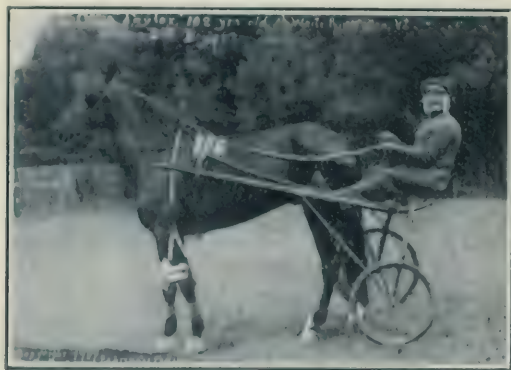
facture of army meat food products. On the other hand, the navy, at present, has no officers at the packing centres, and has been forced to award its contracts for canned goods, for example, on the basis of samples submitted by competitors for the contracts, without knowing how the products contracted for were subsequently made. Up till last spring it thus did not itself have its own officers to inspect the preparation of naval stores at the packing centres; but simply required the packers to manufacture the supplies, under contract, equal to the samples submitted at the time the award was made; reserving the right of the officers at the navy yard where the meat food products were received to accept or reject the goods, if they did, or did not, equal the samples originally submitted.

The fact that the army methods have been so valuable in the improvement of its supplies must have suggested to General Rodgers means to improve the quality of naval supplies. Two steps have been taken, the turning over of the preparation of naval meat supplies to the army veterinary inspectors and the appointment of the first navy veterinary inspector. In due time the navy will probably adopt the whole of the army inspection methods; as it has already adopted, almost bodily, the army specifications for meats.

Were this done, the improvement in quality of the goods would be satisfactory to the navy. Even then, the adoption of veterinary inspection of the preparation of meat food supplies to be used by the Federal government has not gone far enough. The Department of the Interior should have Federal veterinary inspectors, civil service appointees, to supervise the preparation of the meat food products for the Indians. There should be special veterinary supervision of the manufacture of meat food products under contract, for the Federal insane asylums, hospitals, prisons and soldiers' homes. True, the present Federal meat inspection law, administered so admirably by the Department of Agriculture, goes far to control iniquities. Would it not be better, though, if the preparation of meat food supplies, to be used by the Federal government in all the channels mentioned,

was supervised, as has been done so long for the army, and as is to be done for the navy, by veterinary inspectors who are specialists in all industrial, scientific and governmental questions pertaining to the proper preparation of these supplies?

A REMARKABLE HORSEMAN.—Through the kindness of E. H. Stearns, M. D., D. V. S., South Royalton, Vt., we are enabled to present to our readers a photo of Charles Taylor, of White River Junction, Vt. He is nearly 103 years of age, and the horse which he drives is about 20 years old. The time which he made in the last race this year at Tunbridge, Vt., was one mile in 2:27, the last half in 1:12 $\frac{1}{4}$.



Remarkable is this for a man of his age, as well as for the horse. Mr. Taylor is a man that has driven in races for seventy-five years or more, and probably has owned some of the best race horses of this country. Nearly his whole life has been devoted to horse racing, and is probably one of the most noted lovers of equine flesh. His sleeping apartment has been with his favorite race horse for many years.

He is a rugged, sound-minded man, owing to the fact that he never indulged in intoxicating liquors, tobacco or marriage.

THE Veterinary Practitioners' Club of Hudson County, New Jersey, on the evening of December 16, will celebrate their anniversary with a dinner.

THE SURGICAL RELIEF OF ROARING.

BY PROF. W. L. WILLIAMS, V. S., ITHACA, N. Y.

Presented at the 44th Annual Meeting of the American Veterinary Medical Association, at Kansas City, Mo., Sept. 10-13, 1907.

We had occasion to present a communication to this association at its last annual meeting upon the surgical relief of roaring, embodying a brief description of a modified technic with a report of ten cases, some of the most recent of which had not progressed far enough to determine the result (Proceedings American Veterinary Medical Association, 1905, page 179).

We are now enabled to add somewhat to the recorded results in the ten cases reported last year, along with thirteen new ones, twelve of which have reached a stage where the results are apparently reliably determined.

Case 1. A bay trotting mare so badly affected that she was practically worthless and was being used for trading purposes. The operation was performed on November 10, 1905, and the patient discharged on December 11, much improved. On June 3 the owner reported some noise in breathing, but the animal was gradually improving. The difficult breathing was inconstant and much of the time was not observed. Somewhat later in the summer I was informed by Dr. Crawford, of Athens, Pennsylvania, in whose immediate territory the mare was owned and kept, that she was continually improving, and that when driven at a rapid pace on an ordinary road, went sound.

Case 2. As reported last year, this animal died soon after discharge from abdominal disease, after working but little, though showing very distinct improvement.

Case 3. A brown gelding used for general farm and road work, had become a very bad roarer. He was operated upon on December 14, 1905, and discharged January 17, 1906, distinctly improved. He was put to ordinary farm work in April, and for a time breathed imperfectly when pushed, but gradually im-

proved, until the owner was able to report on the 3d of July that the recovery was complete, and that no abnormal sound was made while at work on farm or road. In a communication dated April 5, 1907, the owner stated that the animal remained sound.

Case 4. A bay trotting mare, which had become worthless for road work on account of roaring. She was operated upon January 29, 1906, and discharged March 14, improved. The owner reported on May 22, 1906, that she was greatly improved and doing satisfactory work. On August 26, 1907, the veterinarian in whose territory the patient was owned and kept when operated upon, reported that the improvement had continued, but that the animal had left the vicinity.

Case 5. Patient a valuable coach horse from the practice of Dr. W. H. Ridge, of Trevese, Pa., which was operated upon at the meeting of the Pennsylvania Society on the 6th of March, 1906. Fifty-one days later Dr. Ridge reported that the horse tested sound at a gallop, and on June 11, of the same year, he was given a keen drive on a tally ho without revealing any abnormal sound. On August 17, 1907, Dr. Ridge further reported the horse still at tally ho work and perfectly sound.

Case 6. A very bad roarer operated upon in our clinic May 25, 1906, and last report stated that he was working sound on August 16, 1906.

Case 7. An exceedingly bad roarer, unfitting him for slow light work. The operation was performed in the practice of Dr. V. M. Knapp, of Danbury, Conn. The operation was highly successful and fully restored the animal to usefulness, was sold at a good price and later died from other causes.

Case 8. A bay road mare, belonging to Dr. C. E. Clayton, New York City. Operation was performed July 6, 1906. The operation was practically without result; the character of the sound was altered, the fluttering or vibratory sound has ceased, but there is still an abnormal sound, as in tracheal stenosis, which is little if any less than the original roaring in volume. In our communication of last year, we related that in an experimental case the arytenoid cartilage had dropped down into the cavity of

the glottis and become firmly fixed there, apparently as a result of cutting away too freely and completely the vocal cords and subjacent tissues. In our judgment we here fell into this error and removed too much supporting tissue.

Case 9. A brown coach gelding, in the practice of Dr. George H. Berns, of Brooklyn, N. Y. Operated upon July 8, 1906. Soon after the healing of the wounds there was still considerable dyspnoea, although there was definite improvement. The improvement has been gradual, until Dr. Berns reported in June, 1907, that the horse was fully restored to usefulness.

Case 10. A brown road mare, in the practice of Dr. W. W. Kennedy, of Fulton, N. Y. The operation occurred on August 2, 1906, and marked improvement followed and has remained, but there is still considerably dyspnoea whenever the animal is rapidly driven. So far as we can determine from reports we here again fell into the error of removing too freely the vocal cords and underlying muscles, and allowed the cartilage to drop down into the glottis and become adherent there, obstructing the passage of air.

Case 11. A bay trotting gelding, from the practice of Dr. Ross, of New Haven, Conn., operated upon in the clinic of the A. V. M. A. on August 24, 1906. The patient apparently did well for a time, but by October 1 was breathing very badly.

On October 22, in company with Drs. Kelly, Whitney, Bland, Adams and Lyman, the horse was examined and found greatly distressed in breathing, making a loud noise while standing quietly in the stall. Examination of the seat of tracheotomy revealed it enlarged and slight pressure upon the point increased the dyspnoea to the point of threatened suffocation. The animal was cast, the trachea opened at point of tracheotomy, and it was found that one or two tracheal rings had collapsed, one had softened and largely disappeared, the collapse causing almost complete stenosis of the trachea. A trachea tube was placed in the wound pending further decision. The animal later passed into the control of other parties and reliable trace of him was lost.

Case 12. Patient a very bad roarer, property of Dr. L. B. Judson, Winsted, Conn. Operated upon at A. V. M. A. Clinic August 24, 1906. Dr. Judson reported personally on Aug. 6, 1907, that the horse was still in his possession and used in his practice. Under ordinary conditions no abnormal sound can be detected, but by loading him heavily and driving rapidly up hill a slight abnormal sound is sometimes noted.

Case 13. Patient a black gelding from the practice of Dr. Thomas Bland, Waterbury, Conn., had been obliged to wear a trachea tube for one year, because of severe roaring. Operation at A. V. M. A. Clinic, August 24, 1906. Reported by Dr. Bland August 6, 1907, to be entirely cured.

Case 14. Patient of Dr. G. P. Jeffery, Elmira, N. Y., gray saddle gelding, bad roarer. Operation August 31, 1906. On November 27, 1906, the owner reported little or no improvement. On March 15, 1907, Dr. Jeffery reported that he was gradually improving, but that he still roared slightly at times under unusual excitement. Owner had recently ridden him eight miles in forty-two minutes, or at a pace of 11.4 miles per hour, without inducing abnormal sound.

Case 15. Patient occurring in the practice of Dr. W. L. Baker, Buffalo, N. Y. Operation in clinic of New York State Veterinary Medical Society September 13, 1906. Dr. Baker reported animal completely cured in February, 1907.

Case 16. Patient a thoroughbred hunter, a bad roarer, which could not follow hounds. Operation October 1, 1906. When the wounds had healed, after about four weeks, it was found he still roared. The patient was kept under observation for some weeks longer and was finally secured, anaesthetized and the larynx reopened, which revealed the fact that the left arytenoid cartilage, instead of adhering in the normal position to the thyroid had dropped down over the cricoid and adhered there with its antero-inferior or vocal angle projecting out into the glottis, greatly decreasing its lumen, and evidently largely, not wholly, responsible for the continued roaring. The projecting angle was largely excised. The owner reported on July 29,

1907, that the horse had made a thousand-mile journey during May and June, doing the work well, but could not gallop rapidly without roaring badly.

Case 17. Patient from the practice of Drs. Johnston & Backus, Geneva, N. Y. Operated upon in the college clinic December 2, 1906, and discharged on December 23. Case apparently progressed well until in the spring of 1907, or about four months after operation, when dyspnoea developed and became so greatly aggravated that the animal was destroyed. Opportunity for an efficient autopsy was not offered, but so far as could be learned by limited examination the difficulty lay in the inflammation and collapse of the severed cricoid cartilage.

Case 18. A very bad case of roaring in a thoroughbred used in steeplechase racing. The operation was performed in practice of Dr. E. J. Sullivan, Saratoga Springs, N. Y., on November 29, 1906. A trachea tube was inserted during the operation and removed immediately after. On the 4th of March, 1907, Dr. Sullivan reported that the owner and trainer had tested the horse over 5 feet 9 inches hurdles without producing abnormal sound.

Later it was reported that the horse had refused the hurdles when put to training, so has not raced, but the recovery from roaring at last reports was apparently complete.

Case 19. A thoroughbred gelding, entered in the college clinic November 19, 1906. When discharged he had been galloped as hard as considered prudent and tested sound. The owner reported July 30, 1907, that the horse had been in training two weeks, but had not been pushed far enough to determine his ability to stay over a long distance.

Cases 20 and 21. Two hunter geldings, both very bad roarers; operated upon in the college clinic January 16, 1907, and discharged March 4, 1907, after testing sound at a moderate gallop.

The owner reported July 29 that no test had yet been made in the hunting field. They had been tested in farm work on soft ground enough to demonstrate that they were very greatly improved, and at least were sound for ordinary work.

Case 22. Thoroughbred belonging to same party as Case 19. and operated upon in the college clinic April 27, 1907. Discharged June 4, 1907, after testing sound at a moderate gallop. On July 30 the owner reported horse turned to pasture without having been severely tested.

Case 23. Property Dr. B. D. Pierce, Springfield, Mass. Operated upon in the clinic of the Connecticut Veterinary Medical Society August 6, 1907. The horse was a very bad roarer and wearing a trachea tube. Upon opening the larynx there was observed a tumor or firm swelling above the right arytenoid cartilage, while the left cartilage was passive. The usual operation was performed without interfering with the tumor above the right cartilage. On account of this tumor or swelling, about two inches long and projecting over the glottis one-half inch, an unfavorable prognosis was given.

In this list of 23 cases, the results in 22 have been fairly determined, the 23d being too recent for any conclusion, and because of other complications being of little if any value in determining the efficacy of the operation.

Of the 22 cases, 2, or a trifle less than 10 per cent., were in a sense ruined, less than 14 per cent. were left slightly improved or unchanged, while the remaining 17, or 77 per cent., were either greatly benefited or completely cured, and were made capable of rendering satisfactory service.

Of the two cases ruined, one (No. 11) was not due to the major operation itself, but to the tracheotomy followed by chondritis and tracheal stenosis. In the second case (No. 17) the bad results seemed to be due to a chondritis, resulting from the wound of the cricoid cartilage and first tracheal ring with stenosis at this point.

Those cases which were left but slightly benefited or approximately unchanged, Nos. 8, 10 and 16 failed, apparently, because of the too free removal of the vocal cords and underlying muscles.

In our communication of a year ago, we related that in our first operations we had removed the vocal cords, the mucous membrane from the ventricle of the larynx and the inferior bun-

dle of the thryo-arytenoideus muscle. We then became suspicious that we had removed too completely the retaining tissues of the cartilage and allowing it to drop too completely into the glottis and there becoming fixed to partly fill the air passage, and we consequently aimed merely to remove thereafter the vocal cords and mucuos membrane of the ventricle.

Even here we seemed to fall into error because the muscles underlying the vocal cords are so wasted that they have little power in retaining the cartilage in position, and it was only after we had made the second operation on No. 16 that we realized that this displacement of the cartilage into the glottis was a danger to be reckoned with so long as the vocal cords were removed that we abandoned this and confined our intereference to the removal of the mucous membrane lining the ventricle. This is an old operation, attempted by Gunther, apparently, and abandoned by him as inefficient, but we have not been able to find his technic.

As now performed by us the horse is secured in dorsal recumbency under chloroform and with a trachea tube in the ordinary position. The larynx is opened by a median incision through the crico-thyroidean ligament, the cricoid cartilage and first tracheal ring. The mucous membrane of the ventricle is grasped usually at the median margin, where it is attached to the arytenoid cartilage, and an incision is made with a long handle scalpel through the membrane between the arytenoid cartilage and the forceps. The incision is then continued completely around the margin of the ventricle, invading the vocal cords little, if at all. The isolated mucosa of the ventricle is then drawn upon by the forceps and carefully divided from the adjacent tissues, the aim being to dissect out the membrane as a complete sac, necessitating adhesion in the process of healing. .

Thus far this change has resulted in more prompt, uniform and complete alleviation of the roaring, but we are not yet ready to state just how much tissue should be removed. It appears to us that once the mucosa has been completely removed from the ventricle, adhesion by cicitization is inevitable, and if

the adhesion occurs with the passive cartilage approximately in its normal position, it must cease to act as an obstruction to the entrance of air. We have reason to hope that we may be able to avoid by our change in technic, the losses from imperfect cures, which have amounted to 14 per cent., but the dangers from tracheal stenosis either at the point of the tracheotomy or laryngotomy seems to offer difficulties of a more formidable character.

In one case the trachea tube was kept in place only till the operation was completed and the horse was on his feet, and the patient did splendidly. We fear that, generally, we have kept it in place too long, but in two cases where we tried immediate removal we were obliged to reinsert it because of dyspnoea. Even if we could avoid the ordinary tracheotomy entirely the danger of tracheal stenosis would not apparently be obviated, because in one case we appeared to have stenosis from the wound in the cricoid and first tracheal ring, although no tube was used in this wound.

It has been proposed to avoid tracheal stenosis in this region by dividing the thyroid and leaving the cricoid and first tracheal ring intact, but we are unable to determine that such a wound might not be followed by untoward disease of the thyroid. Study upon this point is needed. On the whole, our investigations have thus far proven highly interesting. The proportion of recoveries has been high, all cases, aside from the two instances of tracheal stenosis, if not cured promptly, have either shown constant improvement for a year or more, or at the worst, have remained practically unchanged, in which respect they differ materially from the results following arytenectomy, where cicatricial tumors and necrosis or other diseases of cartilage occlude or deform the larynx, and invite a gradual and usually insurmountable development of dyspnoea.

The operation is simpler, has less danger for the life of the animal, the patient recovers far more promptly, and all in all, while since last reporting, two animals have been practically

ruined by the operation, we yet feel that the results have added to the encouragement entertained last year. In the two animals which were practically ruined the diseases had already rendered them of little or no commercial value, except through the agency of permanent tracheotomy, and this course was still freely open in each case, but few Americans will consent to use a horse while wearing a trachea tube.

We venture to thus briefly lay before you the results of our investigations to date, hoping that they may arouse increased interest in the practicability of the restoration to usefulness of a large proportion of valuable animals affected with roaring.

THE Indiana Veterinary College registered 150 matriculants this year. Its graduates now being eligible to membership in the A. V. M. A., there seems to be now nothing to hinder their rapid progress.

IN a supplement to an act of the New Jersey Legislature concerning fire departments in cities of the first class, passed by the last Legislature, provisions are made for salaries of heads in the fire department in cities of the first class, among which provisions is one fixing the salary of the inspector of horses, or veterinary surgeon, at two thousand dollars per annum. A referendum clause, however, is attached, requiring that none of the provisions of the act are to go into effect until they are submitted to popular vote at the next general election for acceptance or rejection. We are glad to announce that at the recent election this was ratified.

PENNSYLVANIA MEAT INSPECTORS.—The following ten veterinarians have been appointed agents of the State Live Stock Sanitary Board of Pennsylvania in the meat hygiene service of that commonwealth:

A. O. Cawley, Milton, 7 Arch street; H. R. Church, Luzerne, 400 Main street; G. M. Graybill, East Petersburg; D. E. Hickman, West Chester, 210 North Penn street; Geo. B. Jobson, Franklin, 1117 Elk street; Philip K. Jones, Pittsburg, 327 Main street; C. C. McLean, Meadville, 1001 Water street; T. E. Munce, Washington, 44 East Bean street; O. G. Noack, Reading, 54 South Sixth street; J. H. Turner, Wellsboro.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

SUNDRY BOWEL TROUBLES—ULCERATION, CHRONIC PERITONITIS, NECROSIS, PARASITISM, ETC.

By E. A. WESTON, G. M. V. C., Launceston, Tasmania.

The first case was that of a draught mare, which was brought in to have her teeth done, owing to the fact that she was not doing well. After the operation she did not do any better and suffered once or twice from dull, colicky pains, which were soon relieved by a little anodyne medicine. This continued for some weeks, when she was sent in to my hospital for treatment. I commenced by giving her a good warm drench, which caused the expulsion of a few strongyles, and then put her on a course of nux vomica, arsenic and gentian. This improved her appetite, which was, however, very capricious. She would start to eat heartily and after a few mouthfuls turn away from the food with loathing. After going out of the hospital she seemed a little better for a time, but soon began to show occasional dull colicky pains again. From this out she gradually went down hill, and finally extensive œdema of the head and dependent parts of the body set in and was followed in a few days by death.

Whenever the mare was under my care I watched her temperature carefully, but on only about two occasions observed a rise of from two to three degrees.

Post-mortem revealed slight ulceration of the pyloric orifice of the stomach, due to bots, while throughout the small bowels were numbers of large oblong ulcers, together with a few scars, showing where healing had occurred. The long axis of the ulcers followed the long axis of the bowels and they penetrated deeply into the muscular coat. Death was due to septic peritonitis, caused by perforation of one of the ulcers, and resulted after an illness extending over three or four months.

Case No. 2 was a baker's mare, which seemed "to go all to pieces" one day when out on her rounds. She was lame in both



PORTION OF STOMACH OF HORSE SHOWING TWO TUMORS CAUSED BY THE
SPIROPTERA MEGASTOMA.

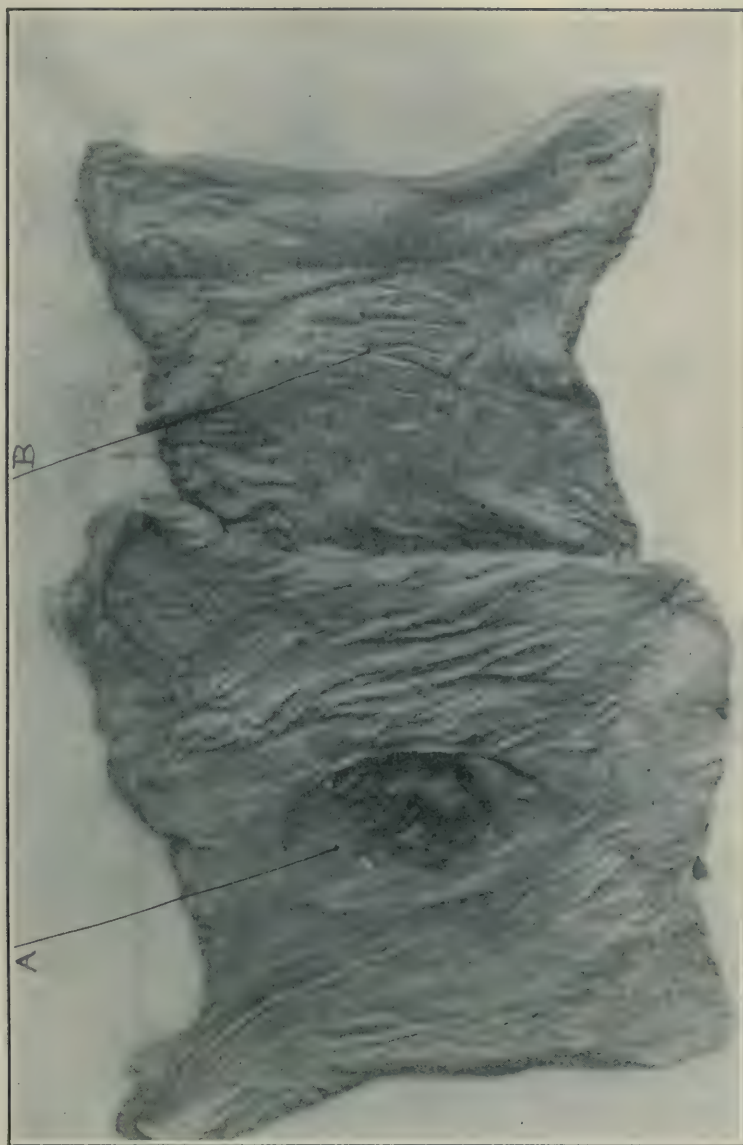


front feet, swelled in the hind legs, showed dull, colicky pains and difficulty in rising, and a temperature of 103 degrees Fahrenheit. I treated her for rheumatism, and for a couple of days she improved a good deal. Then the colicky pains came on more violently, and in struggling to rise she fell and shattered her acetabulum. As she was in fearful agony, I had her destroyed, and on post-mortem discovered that the cause of the colicky pains was commencing peritonitis, due to a small puncture in the duodenum. This puncture was just about large enough to allow an inch and a half nail to pass through it, and looked as though the piece had been punched out with a tiny punch. The bowel contained numerous simial ulcers, several of which had penetrated deeply into the muscular coat. Around these places were numerous bots adherent to the bowel.

Case No. 3 was a big draught gelding, which I had previously treated for acute congestion of the liver. He showed symptoms of subacute colic, lying on his side, groaning and turning his head toward his flank. Temperature normal. The colic soon yielded to anodyne treatment, but appetite remained capricious and the colicky attacks recurred as soon as food was taken in any quantities. After some weeks the horse was sent into my hospital, where I treated him for bots and worms with bi-sulphide of carbon, ol tereb and cantonin, and then put him on a course of tonic medicine, with anodyne doses when necessary. Under this treatment he improved considerably and I wrote to his owner, advising him to take the horse home and turn him out on a warm run. On the day the owner was to come in I saw my patient go down with colicky pains, after we had put him out in the paddock. When the groom brought him in at mid-day he sent in word that the horse seemed very bad, and on inspection I found my patient dying, with every symptom of a ruptured bowel. He died some hours after, and post-mortem revealed rupture at the pelvic flexure of the great colon, the cause of which I never could determine. In the pyloric portion of the stomach I found two large submucous abscesses filled with inspissated pus. They bore some resemblance to the tumors caused by the spiroptera megastoma and microstoma, but I could only find one degenerated specimen of these worms in them. The mucous membrane covering the larger abscesses had sloughed, leaving the cavity open, and no doubt the presence of these abscesses had caused the repeated attacks of colic.

Case No. 4 was a big roan draught gelding, imported from the mainland. He was in fair condition, but would never put on fat, and always seemed dull and sleepy. I attended him on several occasions for subacute colic, when he would lie stretched out full length, groaning with pain, and I treated him for worms, when he passed a number of strongyles. One day he was turned out on a clover paddock and took stomach staggers. I was sent for at night, but was away and did not see him till the following day, a few hours before his death. On post-mortem the cause of his previous unthriftiness and colicky attacks was revealed. The whole pyloric portion of his stomach was thickly studded with tumors full of spiroptera. The photo shows two or three of these.

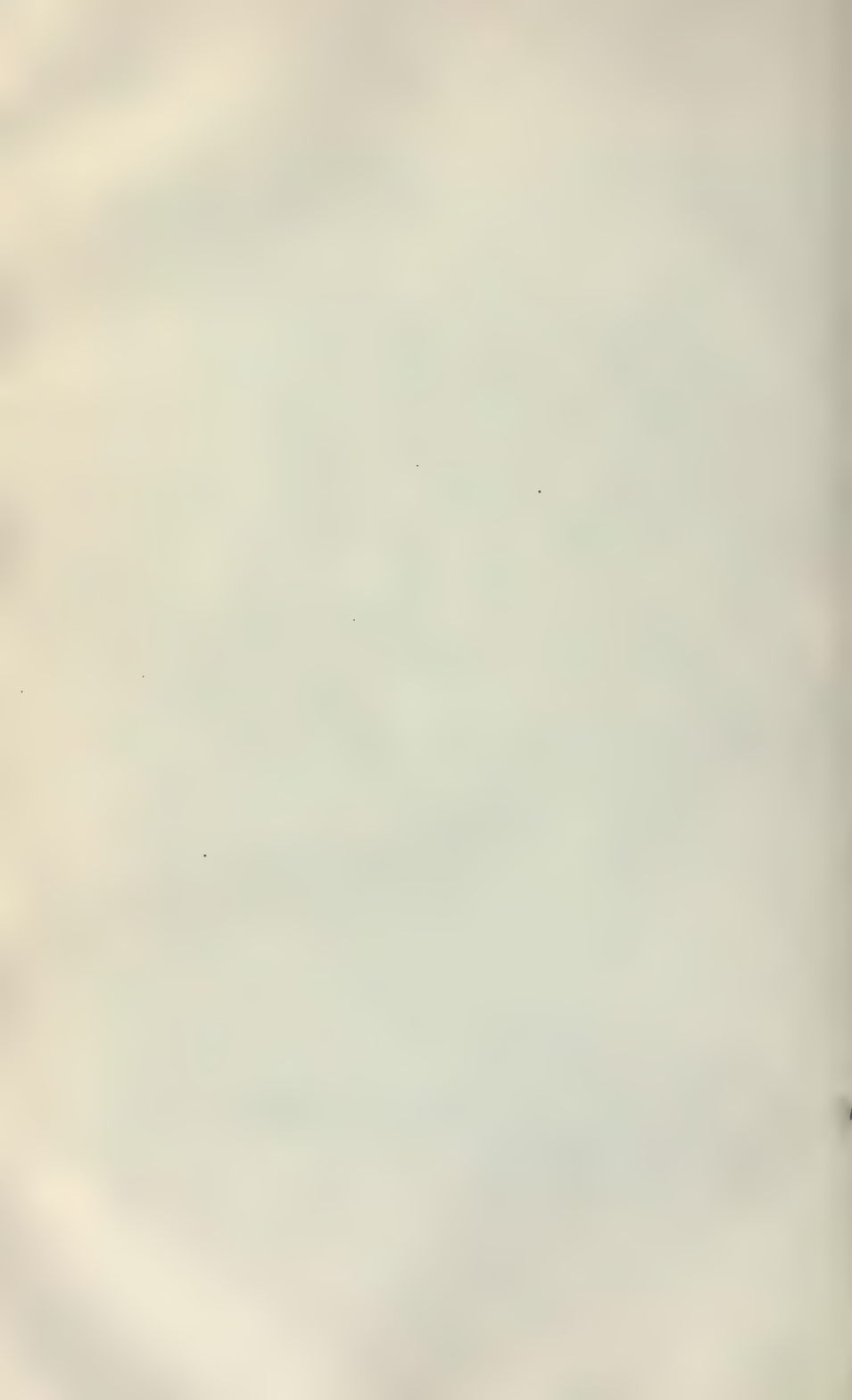
Case No. 5 was a five-year old draught mare, recently purchased for £32. On the night of February 23 I was called to see her, when she showed dull, colicky pains, a temperature of 103 degrees Fahrenheit and a peculiar, weak heart sound, to which I will refer again. On the following day she seemed better; temperature and respiration normal, but appetite dull. During the week the manager reported that the purgative ball I had administered had acted and that the mare seemed better, although somewhat sleepy and capricious in her appetite. On March 4, eight days later, I was again summoned, and found her with drooping head and ears, cold extremities and a running down pulse. Greatly to the astonishment of the manager, I stated that she was dying, probably from a punctured bowel. About six o'clock at night I was sent for to make a post-mortem, as the owner and manager were very skeptical regarding the alleged puncture. Post-mortem revealed extensive chronic peritonitis, with gallons of purulent fluid in the abdominal cavity and extensive adhesions between the bowels. A large surface of the great colon was adherent to the peritoneum, and of a bluish color, while the liver was covered with extensive casts of lymph. All the large glands, liver, spleen, kidneys, etc., were softened and degenerated. In the anodeum were several of the small punched out cavities described in Case No. 2, and which, for want of a better name, I have called ulcers. None of these had, however, penetrated right through the bowel, but in the ileum, near the ileo-caecal valve, was an oblong ulcer, similar to those described in Case No. 1. This ulcer was about an inch and a half long by half an inch broad, and it had become necrotic in the centre. Through this necrotic portion a leakage of bowel



ULCERS IN BOWEL OF HORSE.

A—Perforating ulcer.

B—Ulcer healed.



fluids had occurred, thus setting up peritonitis. Nature had endeavored to plug the opening by extensive adhesions of the mesentery to the serous coat of the bowel. It is extraordinary to me that the mare should have lived so long and exhibited so few symptoms of illness, considering the extensive lesions of the bowels and peritoneum, which must undoubtedly have existed for some days, if not weeks. As in most post-mortems conducted here, bots and armed strongyles were present in considerable numbers.

Case No. 6 was an aged draught gelding. I was sent for as he showed colicky pain and great dejection with inapetence. On arrival I found him standing with legs slightly apart and head and ears drooping. Temperature was 103 degrees Fahrenheit, the heart rapid and weak and the extremities cold. Very little pain was shown, the symptoms suggesting rapid failure of the vital powers. During the night he died, and post-mortem revealed extensive peritonitis of a subacute type, caused by two large necrotic patches in the wall of the great colon. Through these patches the bowel fluids had leaked, and here again nature had endeavored to stop the leak by establishing extensive adhesions between the serous coat of the bowel and the mesentery. As in the previous case, one wonders how the horse lived so long with such extensive lesions present. As far as I could learn in this case, he had shown no signs of illness to within a day of his death.

Case No. 7 was another aged draught gelding. Twelve months previously I had attended him for colic and had stitched a wound on his leg. On August 2 I was sent for, as he showed very slight abdominal pain, with inapetence and diarrhoea. Temperature, heart and respiration were normal, and I prescribed a couple of anodyne drenches and followed it up with ammon carb., gentian and sodii bicarb. Under this treatment he improved, until the 7th, when he was brought into my hospital suffering from dull colicky pain. Treated him for worms and bots without much result (only a few doses of carbon bisulp were given, as it seemed to bring on colicky pain), and put him on a course of nux vomica, ginger, gentian and soda bicarb. Under this treatment his appetite improved and the colicky attacks became less frequent, until the 15th, when he took a violent attack of colic, with the general dejection, cold extremities and the rapid, feeble heart so characteristic of fatal bowel lesions. As I felt sure the bowel had ruptured, I ran him away to the

knacker's yard and put a charge of shot in his head. Post-mortem revealed two extensive ruptures of the great colon immediately opposite each other. At the seat of one the wall of the bowel had undergone degeneration and a partial rupture had existed for some time, the food being merely retained by the serous coat. The wall of the posterior mesenteric was much thickened by chronic arteritis, and was partially plugged by trombus, in which numerous strongyles were present. The lungs contained a few specimens of the *strongylus arnfeldi*, which are very rare here.

I have described these cases at some length, as they are the result of many hours spent in making post-mortems, to make which I have often driven miles. The conditions leading to ulceration, necrosis and rupture appear to be very imperfectly understood. I have often thought that the former may be due to wounding of the bowel lining by armed parasites, such as bots and armed strongyles. These wounds undoubtedly exist and it is reasonable to suppose that pathogenic organisms passing along the bowel may become lodged in the wounds and start ulceration. The ulcers are said by medical men to whom I have shown them to resemble those of typhoid, but they do not appear to be confined to the lymphoid tissue, though this is a point that requires further investigation. In some of the cases (Nos. 1 and 5) the ulcers must have existed for some considerable time, and yet in No. 1 they did not cause any very serious symptoms, while in No. 5 they caused no symptoms at all until a few days before her death (she was in splendid condition). This remark also applies to the bowel necrosis seen in No. 6, who had done well up to the time of his death. In reference to this necrosis, it appears to be generally regarded as due to embolism of the small branches of the mesenteric arteries, and this explanation receives support from the prevalence of aneurism and thrombosis of the mesenterics, due to armed strongyles. It would also be of interest to study the effect of bisulphide of carbon on the spiriopetra megastoma and microstoma. In Case No. 3, I wondered whether the abscesses had been the home of worms which had been destroyed by the bisulphide. This drug is most deadly in its effect on the *Ascaris Megaloccephala*, and should be equally efficacious in its action on most parasites inhabiting the stomach and duodenum.

Case No. 9. This was a fine upstanding draught gelding, who to all appearances was in the best of health. My first acquaint-

ance with him was on one pouring wet night, when I had to drive four miles to see him, after returning from a long country trip. On my arrival he had recovered, but I learned from his owner that for the last twelve months or more he had suffered from violent colicky attacks, which a local blacksmith had diagnosed as due to heart disease. The owner believed the attacks to be due to bladder obstruction, so he brought the horse in and I passed the catheter and examined him for cystic calculi, without result. From the history of the case and as the result of a careful examination, I diagnosed partial obstruction of the bowel, probably due to a calculus. The next time I saw my patient was one Saturday, when he was brought into the hospital in a dying condition. He had been in violent agony the previous night and died on Saturday evening. On Sunday I held a post-mortem, and found the large tumor shown in the photograph. It was situated in the mesentery, in the iliac region, and lay almost upon the bowel. On section it proved to be composed of mesenteric glands, which had evidently become infected at some period, with the result that chronic inflammation was set up, and had spread to the adjoining glands and intervening mesenteric tissue. The violent colic had undoubtedly been due to the tumor pressing on the bowel when it was in certain positions, while the fatal termination resulted from a twist in the small bowels. This latter may have been caused when the horse was rolling in pain.

Case No. 10 was a bay draught mare belonging to a farmer, and she was brought to me with the following history. She had always done well to within a couple of months ago, when her appetite became capricious and latterly she had suffered from occasional attacks of dull colic. Her owner requested me to examine her teeth, which I did and informed him that she had a splendid set, and that her symptoms pointed to ulceration of the bowels. I advised turning her out, and told him that if one of the ulcers burst she would go off very quickly. Shortly afterward I received word that she had become worse and died. On post-mortem I discovered one small ulcer in the duodenum, just beyond the pylorus. In the centre of this was a tiny puncture, with the resultant peritonitis.

Case No. 11 was a white draught gelding, brought to me for dental examination, with the history that he had not done well lately. As in the previous case, I found him possessed of a good array of molars and recommended treatment for parasites, which was duly carried out. The horse, however, continued to get worse, and displayed a disinclination to take either food or

water. The refusal of water is almost pathognomonic of ulcerated bowels and is a symptom of great diagnostic value. The animal seems to fear to drink freely, as if it knew that the weight of water might completely rupture the eroded bowel. To return to my patient, however, he dragged along from the autumn, when I first saw him, till early in the spring. By this time he had wasted to a skeleton and ultimately became unable to rise and was destroyed. On post-mortem I discovered chronic gastritis, with a large punched out ulcer in the duodenum. The so-called



BOTS IN STOMACH OF HORSE.

A—Bots penetrating deeply into stomach wall. B—Bots attached on the surface in the ordinary manner.

ulcer was raised above the surrounding mucous lining, due to hypertrophy of the inflamed mucosa, and its centre looked as though a piece had been punched out of it. To the left of this was what I may term an embryo ulcer. It consisted of an inflamed teat-like projection of the mucous membrane with a minute puncture—due I stoutly maintain against all opposition to my friend the bot—at its apex. This case serves to illustrate my theory in reference to the formation of these ulcers. Here

we have the bowel wounded, the entrance of the infective material, the formation of a small submucous abscess, which subsequently bursts and leaves an open wound, this in many cases continues to ulcerate until puncture of the bowel occurs.

It must not be supposed, however, that all cases of ulcerated bowel end fatally, but I have recorded the fatal cases because I have been able to demonstrate on post-mortem the accuracy of my diagnosis. I had in my possession a pony, and now have a buggy mare, both of which were reduced to skeletons by what I diagnosed as ulcerated bowels. The pony is still alive and well, and I can recall at least two other cases, one a trotting filly and the other a draught gelding, which have recovered. The recovery is gradual, convalescence extending usually from six to twelve months, according to the time of year. It is always advisable to turn the patient out on good grass, after treating for parasites, as the natural food seems to allay the gastric irritation, and no doubt on this diet the bowel contents harbor less pathogenic organisms. These remarks, however, refer to ulceration of the pylorus and duodenum. In ulcerated colon there does not appear to be any marked symptoms until the disease has reached a stage at which rupture is imminent and may occur at any moment. The lesions in this region, too, are true ulcers, and are not of the "punched out" type seen in the duodenum.

I have forwarded specimens from Case No. 11 to Veterinary Surgeon Desmond, of South Australia, and doubtless your readers will be interested to hear from him should he make sections and cultures from the bowel.



OBSTRUCTION OF GLOTTIS BY TUMOR:—The accompanying cut illustrates a case reported by E. E. Bittles, veterinarian, New Castle, Pa.

"The small cartilaginous tumor attached to the anterior part of the glottis occasionally would pass into the esophagus, becoming fast there, holding down the glottis until the mare would become unconscious, falling to the ground with great force. This would loosen it and she would arise and seem as well as ever until she had another spell. She lived a year and a half that way, and finally choked to death."

SURGICAL ITEMS.

BY DRs. LOUIS A. AND EDWARD MERILLAT, CHICAGO, ILL.

RECENT DATA IN VETERINARY SURGERY.

It is no small chore for the veterinary practitioner to keep well informed in every department of medical research. The scope of veterinary science is a broad one and the kaleidoscopic panorama that is constantly evolving within the kindred sciences appertaining thereto is entirely too rapid for the busy man to follow, however ambitious he may be. The English reading veterinarian is unfortunately not supplied with literature in which veterinary history is systematically epitomized for his benefit and with the object of keeping him abreast with the times in all departments. In America we have only the REVIEW, without which we would indeed be a sorry, hungry lot, but these twelve modest numbers—every one a jewel more valuable than its predecessor—issued during each fiscal year, cannot expound everything. True enough, there are college bulletins, college journals, bulletins of experiment stations, bulletins of the Department of Agriculture and books on different subjects, which appear from time to time, all of which in their aggregate contain a profusion of the newest thoughts, theories and discoveries, but who of us take the time to properly assimilate their contents? It seems that we are either too indifferent or too few in numbers to amply support the publication of complete compendiums of our annual accomplishments, such as are published for the benefit of the practitioner of human medicine. The physician who desires to avail himself of the best opportunities to keep abreast with the times without wading through voluminous volumes may in a few leisure moments acquaint himself with all the newest thoughts and discoveries of the leading pathologists and specialists through the medium of various publications which epitomize medical history as fast as it is made, and with the sole object of keeping its subscribers informed in the progress of each department of medicine. Prominent among these publications is the *Practical Medical Series* of the Year Book Publishers, which consists of a number of small well-bound volumes, issued at regular intervals during each calendar year. Each volume deals with a separate subject. General surgery, general medicine, obstetrics, pediatrics,

eye, ear, nose and throat, gynecology and others are among the volumes already issued for 1907. The work is done by prominent specialists, under the general editorial charge of an able medical scholar, and the names identified with the work at once recommend its character. Murphy, Senn, Mayo, Billings, Parks, Keirle, Delee, Keen, Bull, Morris, and many others are among those who lend their assistance toward the compilation of these valuable contributions.

While glancing through these volumes the value of many of the items to the veterinary practitioner so forcibly suggested itself that it was thought worth while to present some of them to the readers of the REVIEW through this department, as the first installment of "Recent Data in Veterinary Surgery," which will appear in successive numbers. We must, however, beg the indulgence of our readers if some of the subjects appear more medical than surgical. It is sometimes impossible to separate them.

Tuberculosis.—Lydia Rabinowitsch, discussing the relations of human and bovine tuberculosis concludes (1) that the morphologic differences between the human and bovine bacillus is not so constant and distinct as to justify their classification into two disconnected types; (2) that the possibility of infection from cattle has been shown, but the amount of danger cannot at present be estimated; (3) that the war on bovine tuberculosis should be insisted on because of agricultural interests as well as on account of the direct dangers to man,

H. Kossell, reviewing the same subject, classifies the bacillus into two types: *typus humanus* and *typus bovinus*, and says, (1) that the widely spread tuberculosis of cattle is traced exclusively to infection with the bovine type, to which swine are also markedly susceptible; (2) that swine are much more susceptible to the *typus bovinus* than to the *typus humanus*; that tuberculosis of human beings arises chiefly from infection with the *typus humanus*, which is transmissible from man to man; (3) that tubercular lesion in human beings can be produced by infection with the bacilli of the *typus bovinus*; (4) that tubercle bacilli of the *typus bovinus* can be transmitted to human beings by food, especially by milk of cows affected with tuberculous udders; (5) that the infections from bovine sources are few as compared with the danger from a consumptive human being.

Acute Rheumatism is a microbial disease. Every year's research adds to the truth of this assertion, which only a few years

ago would have been scouted in defense of the old unproven "acid theories." Poynton and Paine have isolated and cultivated "the rheumatic diplococcus" from the cerebro-spinal fluid of four fatal cases of acute rheumatism, and have produced arthritis, endocarditis and pericarditis by intravenous injections of the cultures into rabbits. Ethyl salicylate is regarded as being *almost* a specific in all forms of rheumatism. The derivatives of salicylic acid are said to possess both antitoxic and bactericidal action on the etiologic agents.

Goiter.—The cause of goiter is as yet unproven, but is thought to be due to increased functional activity of the thyroid body when this organ is called upon in connection with growth and development of the body or to rid the body of bacterial poisons after a serious disease. The beginning of goiter often follows attacks of scarlet fever or similar afflictions. (In horses it is not unusual for goiter to supervene attacks of distemper, influenza, pneumonia, etc.)

Hydrophobia.—N. G. Keirle considers that the now famous Negri bodies are cells engaged in the removal of the tissue which unknown virus of rabies has vitiated, but concludes that the presence of these bodies is *not pathognomonic of rabies*, since they are also found when rabies does not exist and are sometimes wanting when rabies is present. It is recommended that the preventive treatment should not be delayed awaiting the report of these preliminary examinations, when the circumstances are suspicious. On the contrary, when there is any reason to suspect that a person has been infected with the virus of rabies he should be submitted to the preventive treatment by a reputable institution, without delay. (The above remark about Negri bodies is in direct conflict with the prevailing impression of veterinarians. We had been led to believe that Negri bodies were found only in rabies, and that they are strictly characteristic of the disease. Such statements to the contrary are worth taking into account.)

General Anaesthesia.—An extended discussion on the relative safety of ether and chloroform, including the experiences of many surgeons from every part of the world, leaves no doubt as to the greater safety of the former. In Scotland chloroform still holds its popularity, but, according to the confession of an eminent Scottish surgeon, "Because there are no coroner's inquests in Scotland." In short, ether seems to be the safest anæsthetic. The fatalities from chloroform outnumber those from ether almost two to one. Great stress is placed upon the

experience of the anæsthetist. "His diploma alone justifies no man in giving an anæsthetic unless he has had *considerable* experience," says J. E. Lumbar, in discussing this phase of the problem.

In regard to post-anæsthesia complications, pulmonary troubles predominate. Out of 2,500 cases 2.2 per cent. developed lung complications, of which 30 cases were pneumonia, 19 acute bronchitis and 6 pleurisy.

Direct manual massage of the heart through hurriedly made incision into the thorax, either directly or by the way of the diaphragm, is now frequently resorted to in chloroform syncope. Although the effort sometimes fails, it is warranted in view of the frequent successes.

Local Anæsthesia.—Cocaine has not lost its prestige as the chief local anæsthetic, in spite of the numerous substitutes which are from time to time introduced to the profession. In view of its toxicity the anæsthetizing of large areas must be done with weaker solution, which have only the disadvantage of acting slower than the concentrated solutions. The injections should be made rapidly, so as to separate the tissues, which in itself has anæsthetic effects. If layers of tissues are separated by the rapid injection of any fluid, anæsthesia of the separated elements supervenes; hence the advisability of combining this "physical anæsthetic" with the effect of the injected chemical held in the solution.

Hand Disinfection continues to attract the attention of the human surgeon. V. de Mestral concludes a deliberation on this subject by stating that absolute and sure disinfection is practically impossible, and that the only safe method is to avoid contact with the hands. Soap, sublimate and alcohol used consecutively in the order named is given as the best method of cleaning as good as possible. Rubber gloves, previously sterilized, when not found cumbersome for any particular work, are often useful in this connection. In addition to these simple suggestions, which apply equally to veterinary surgery, a veterinarian should practice the wearing of gloves while preparing (casting, etc.) a dirty patient for operation.

For cleaning the hands contaminated with pus or any albuminous substance, lysol, carbolic acid or creolin are preferable to sublimate, as the latter is rendered inert in the presence of these albuminous substances. Barker, in a clinical lecture on "The hands of the surgeon and his assistants," states that the washing

of hands with very hot running water and soap, followed by a brisk rubbing with spirits, is undoubtedly the safest method of dispatching bacteria that so persistently inhabit the human skin, but adds that an absolutely sterile hand is an exception. As to the washing of hands during an operation, Murphy regards the practice as more harmful than beneficial, claiming that the blood-coated hands do not shed the epithelium and thus withhold the bacteria that escaped the initial washing, while Barker holds to the advisability of repeated washing, on account of the unavoidable contaminations while operating. After discussing this subject at length, the writer concludes with a paragraph that should be seriously considered by every veterinary surgeon, viz.: "With a little practice, the routine of employment of instruments in place of the fingers during an operation can be established, and in the end it becomes a habit."

Surgical Drugs.—*Bicarbonate of soda* is highly recommended as a wound dressing, dry and in solution. Hot solutions, 2 ounces to the quart, are injected into the wounds and then the dry soda is powdered over them and covered with appropriate bandages. *Iodin*, in the form of pure crystals, is said to possess a higher antiseptic potency than any of the ordinary dry dressing powders. It is easily applied in this form by first dissolving it in ether and then injecting the solution into the wound. The ether soon evaporates, leaving an even coating of iodine crystals over every part of the traumatic cavity. The application is made as soon as the bleeding has ceased, so that the coating is not immediately washed off. It is, however, at the subsequent dressings that the greatest benefit is obtained from this energetic antiseptic treatment. *Solutions of ammonia chlorid*, 6 per cent., are mentioned as having excellent effects in clearing up opacities of the cornea, both in old and new ones, excelling the results from any of the older lines of treatment. A *varnish for wound dressing* is made from mastic, 20 parts, chloroform, 50 parts, and a few drops of linseed oil. This varnish adheres perfectly to the integument and is desirable where perfect occlusion is essential. It is the artifice of Japanese army surgeons, and was used during the Manchurian campaign.

Sensibility of tissues.—It is probably a surprise to many, who have never given the matter sufficient study or thought, that many of the organs and tissues of the body, usually regarded as being highly sensitive structures, are not supplied with sensory nerves at all, and in short, are insensible to all pain, pressure,

heat and cold. The totally insensitive structures of the body are the brain, bone cartilage, the heart, blood vessels, the thyroid body, the liver, the spleen, the pancreas, renal parenchyma, the internal genitalia of females, the stomach, the intestines and the gall bladder. As elemental as these statements are, it is remarkable that they are relatively new disclosures, brought about by surgical manipulations of these organs in the absence of general anæsthesia. It is not unusual now-a-days, whenever general anæsthesia is contra-indicated from any cause to perform laparotomies with only local anæsthesia of the abdominal paries. Local anæsthesia of the abdominal wall and ether intoxication (etherrausch) are frequently practiced together while the abdomen is being incised, but the latter is discontinued as soon as the viscera are exposed. As the viscera are deprived of sensation anæsthesia is unnecessary while these are being operated upon.

Hemorrhage.—The modern treatments of hemorrhage include: (1) The administration of artificial sera: normal saline, Ringer's solution or Locke's solution; (2) Posture; (3) Compression; (4) The administration of Stimulants; (5) Blood transfusion. Artificial serum transfusion has its limitations, because only a certain amount of these solutions will remain in the blood vessels. When pushed they accumulate in the intestinal tract, lungs, liver and spleen to the menace of the economy. In the editor's own words: "The use of these solutions is exceedingly valuable, but there is an obvious limit to their usefulness." The resort to stimulants is of limited value. Their value diminishes with the increasing gravity of the hemorrhage, and when the ænemic centres no longer respond, the injudicious use of such drugs as digitalis may functionally damage the heart by the susceptibility it retains to such drugs. Crile and Dolley have recorded some valuable experiments on direct blood transfusion. When the diminished blood volume threatens to result fatally the volume must be restored, and since the artificial sera will only partially effect the required restoration, blood itself must be supplied. But the blood of one species will not answer for that of another. "A man must be treated with another man's blood." That of an animal will not assimilate with the human fluid to serve any useful purpose. The technic of the operation consists of uniting the proximal end of an artery of one subject to the proximal end of an artery of the other, instead of making a proximo-distal anastomosis. This order is observed to avoid excessive blood transference. The cut arteries are clamped until

the artificial anastomosis is effected and then the clamps are released, and the blood is allowed to flow until a sufficient amount has been transferred. Every degree of hemorrhage (experimental) was treated by this method. Favorable results were obtained even when animals were bled at once to a presumably fatal degree. Several clinical cases are mentioned wherein the transfusion was carried out with good results.

"Invisible Surgery."—The healing of cutaneous incisions without leaving an indelible hairless scar has been previously mentioned to the readers of the REVIEW, since which time it has been our privilege to apply the method in many operations with flattering success in animals. Monks (1899) and Aymard (1906) first suggested the idea of incising the skin at an angle, so as to produce a beveled flap (instead of a straight juxtaposition of the edges) and thus leave no blemish of the epiderm.

Monks first applied the method in treatment of scalp wounds, while Aymard applied the principle to operations to other regions, especially the more exposed parts of the body. To-day the beveled incision is standard; it is adopted not only for all incisions in exposed parts of the body when thought expedient in the performance of operations, but is frequently utilized in the treatment of accidental wounds.

In animal surgery, when blemishing is to be avoided, the beveling of the skin flaps is par excellence the best incision of the skin, but the principle may be applied often to good advantage for the more important purpose of assuring a union. The flap brings a greater *contact area* and thus increases the chances of primary union, even when sections of skin are sacrificed in the operation, such as would necessarily occur in the ablation of a growth that is riddled with cutaneous perforations (shoe boils, etc.).

Magnesia Sulphate in the Treatment of Tetanus.—The transfusion of this saline in solution (three drams to the pint) is given as a new treatment for microbial tetanus. Greely (Brooklyn) reports two cures, at least one of which seems miraculous. The solution may, of course, be given *ad libitum*, in the jugulars, subcutaneously, and into the peritoneal cavity. Several years ago Blake, and later Logan, mentioned the potency of this drug in tetanus, but no special notice had been taken until Greely reported his two cases in September, 1907 (*Jour. Am. Med. Assn.*). The method was tried on one horse suffering with an acute attack, and although there was a marked palliation of the contractures

during the twenty-four hours succeeding the administration, the paroxysms recurred and finally proved fatal. Whether the solution has a neutralizing or else an eliminating effect on the tetanic toxin is not known, and more data are necessary to establish its real worth.

(*To be continued.*)

AT the last annual meeting of the Massachusetts Veterinary Association, Secretary Frank J. Babbitt, of Lynn, was promoted to the Presidency, and Dr. William T. White, of Newtonville, succeeded to the Secretary's portfolio.

"SINCE I have been a subscriber of the REVIEW, I have seen a great improvement in the paper, and cannot see how an up-to-date veterinarian can be without it, and the price is within the reach of all."—(*E. H. Stearns, M. D., D. V. S., South Royalton, Vt.*).

STATE VETERINARIAN WILLIAM HERBERT LOWE has been retained by Rutgers College and Scientific School—the New Jersey State College for the benefit of agriculture and mechanic arts—New Brunswick, N. J., to lecture on veterinary science before the short course students in agriculture.

PRESIDENT DALRYMPLE has reappointed Dr. D. Arthur Hughes a member of the Committee on Intelligence and Education of the A. V. M. A. Dr. Hughes is to investigate "The Veterinary Sanitary Laws and Regulations of the Several States: How their Formation and Administration Exhibits the Progress of Veterinary Intelligence and Education in the Different Sections of the Country."

PURSUANT to a joint resolution passed by both houses of the New Jersey Legislature and approved by the Governor, a commission has been created to investigate the live stock industry of that state, particularly the horse industry, and to make recommendations thereon to the next Legislature. The commission is composed of one Senator, one Assemblyman, the President of the State Board of Agriculture, the Secretary of the State Board of Agriculture, the Master of the State Grange and Dr. T. Earl Budd, as the representative of the veterinary profession.

ABSTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

CONGENITAL TUBERCULOSIS IN A CALF [*Prof. Rievel, Hanover*].—Prof. R. found numerous tubercles, some of which were the size of a Brazil nut, in the thoracic viscera and liver of a calf twelve days old, which were sent to him for examination. The larger tubercles were difficult to incise, a grating noise being perceptible when cutting through them. These tubercles had a yellowish dull centre, in which was found calcified granules surrounded by a grayish white border zone. The pulmonary lymph glands and the mediastinal glands were considerably enlarged and studded with caseous foci, containing innumerable grayish white calcified granules. On the liver similar lesions were found. According to the accompanying report, it was evident that also the kidneys, mesenteric lymph glands and all the body glands were affected. Rievel found typical tubercle bacilli in relatively large numbers. In the second case, a calf fourteen days old, which was born of a cow that coughed almost incessantly, had a poor appetite and was emaciated, the same conditions were present. In this case, too, the nodules and lymph glands contained tubercle bacilli. In both cases the calcification of the tubercular nodules indicated intra-uterine infection.—(*Deutsche Tierärztliche Wochenschrift*, 1906, No. 15.)

ENDEMIC CANCER [*Dr. A. Sticker, Asst. at the Imperial Surgical University Clinic, Berlin*].—Dr. Stickler had the opportunity to compile very interesting statistical data in a town in which an accurate death register was kept. In a low lying street in this town there occurred in certain houses during the last fifty years, proportionately, many cases of cancer. From 1825 to 1905, eighty years, there occurred in this small town 41 fatal cases of cancer, and of these 25 occurred in 11 houses in the above-mentioned street; also from these 41 cases 23 occurred in 7 families.

Hitherto we sought to explain the frequent occurrence of cancer in houses and families as caused by alluvial and soil conditions, blood relationship and heredity. The transmissibility of cancer is no longer a hypothesis, as thousands of experiments have already proven. The frequent occurrence of cancer may be naturally explained from person to person. By reason of the numerous experiments conducted, it has been proven that tumor cells possess great resistance to thermal, mechanical and other influences, and that also the transplantable, as well as the embryonal, wandering tumor cells may lead to a prolonged *vita latens*. It is not improbable, too, that the cancer cells remain viable in houses exterior to the human body.—(*Zeitschrift für Krebsforschung*, 5, Bd.)

CONCERNING THE ANÆSTHESIA OF HORSES AND DOGS BY MEANS OF INTRA-PERITONEAL INJECTIONS OF CHLORAL HYDRATE [*Prof. Sendrail*].—As intravenous injections of chloral hydrate are dangerous for producing anæsthesia in the domesticated animals, and rectal infusions of the same agent, on the other hand, are unreliable, the author has experimented with intra-peritoneal injections of chloral in horses and dogs. Sendrail performed his operations in this way, he punctured the flank superiorly with a trocar, to which he attached a rubber tube and funnel, through this he poured the chloral solution into the abdominal cavity. He states there is little danger of injuring the intestines, as they yield to the pressure of the trocar. The chloral hydrate must be in a 10 per cent. solution when used for dogs and horses, the dose being computed in proportion to the body weight, 1 gram to 10 kilograms for the horse, consequently, the dose of chloral for the animal may vary from 25 to 75 grams. For the dog we should give 1 gram to 3 kilograms body weight; the dose for this animal may vary from 2 to 12 grams. From such doses in these proportions no ill effects are to be feared. At least ten minutes after the injection the animal lies down, and in a few minutes is fast asleep and insensible, without having previously passed through the stage of excitement. This state of surgical anæsthesia lasts at least half an hour, but the animal may lay a whole hour without scarcely moving. After this the animal stands upon its feet, its gait is slightly tottering and consciousness partially returns; the patient fully recovers the same day. In those cases where there is protracted narcosis, due to too large a dose of chloral or a special susceptibility on the part of the animal to the action of the drug, sensibility may be accelerated

by the eliminating action of pilocarpine injections. The advantage of administering chloral hydrate in this manner is, that it does not influence the action of the heart in the least, and again, that narcosis through this agent is not contraindicated in cardiac diseases, as is the case with most other remedies. In operations it must be borne in mind that chloral is a vaso-dilator. The ideal narcosis following the use of chloral, the perfect accuracy as to its action, the simplicity of its technique, the ease and rapidity with which somnolence sets in and the possibility for the operator to administer the anæsthetic himself, which relieves him of much anxiety, these are all advantages which should encourage the use of this method.—*Revue de Toulouse*, Jan. 1, 1907.)

CLINICAL EXPERIMENTS ON HORSES WITH REGARD TO THE ACTION OF THE LOCAL ANÆSTHETIC ALYPIN [*Dr. A. Dittmer*].—Dittmer had experimented with alypin, a glycerine derivative and substitute for cocaine, for differential diagnostic purposes in minor surgical operations, and also for toxicological investigations. He arrived at the following conclusions:

1st. That alypin is fully equivalent to cocaine in action as an anæsthetic.

2. That alypin is ten times less poisonous than cocaine, as the first symptoms of poisoning after the use of alypin occurred when doses of .006 grammes per kilogram body weight was administered, while toxic symptoms appeared following the use of cocaine in doses of .0007 grammes.

3d. Alypin admits of sterilization without undergoing decomposition and remains permanent for a very long time.

4th. The action of alypin is twice as rapid as that of cocaine, a fact which is of the greatest importance in operations and for diagnostic injections.

5th. Alypin is somewhat cheaper than cocaine.

6th. Alypin produces a slight hyperæmia.

Consequently, alypin proffers a most serviceable substitute for cocaine and deserves to supplant the use of the latter in veterinary practice. Dittmer usually prescribes a 3 per cent. solution (0° 3 grammes, 10 *aqua destillata*).—(*Monatshefte für prak. Tierheilk*, XVIII Bd. 5, Heft.)

EXPERIENCE WITH YOHIMBIN-SPIEGEL DURING THE YEAR 1906 [*Dr. Holterbach, Offenburg*].—Holterbach discusses the question relating to the sexual action of yohimbin on impotent and sterile animals. He takes advantage of the numerous brief reports of fellow practitioners, to whom, apparently, trial

samples of this remedy has been sent by the chemical factory at Gustrow, i. m. These casuistical notes prove that yohmbin-spiegel is a valuable agent, and probably the best aphrodisiac on the market at the present time. Taking as a basis the publications of Oberwarth, Müller and Strübell, Holterbach justifiably concludes that the action of yohmbin is not limited to the genital sphere alone, but also that this alkaloid plays an important part in the treatment of female diseases. Of course, where retrogressive changes have taken place in the ovaries, such as atrophy and so on, the drug is of no avail. Holterbach is also of the opinion that in the administration of yohmbin the symptoms of heat can be produced at will and independently of periodic oestration. This point, possibly, has become a matter of importance for breeders and others. From a clinical case of distemper, with paralysis of the hind quarters, Holterbach has been able to testify to the prominent action of yohmbin on the central nervous system, as described by Strübell; also that it increases and maintains an abundant supply of blood to the brain and spinal cord when it is prescribed in medicinal doses, and consequently stimulating the body functions in general. Holterbach has also used yohmbin as an anæsthetic for the gastric mucous membranes in a case of nervous vomiting in a dog (.01 to 100 aqua feroid), a tablespoonful every quarter of an hour. Holterbach corrects the doses formerly recommended; he administers now continuously small doses, which are tabulated as follows:

Horse and cow.....	.05
Swine .....	.01
Sheep and goat.....	.01
Dog, 10 kilograms.....	.00025
Dog, 25 kilograms.....	.001
Dog, over 25 kilograms.....	.025

To be given 3 to 6 times daily as a sexual excitant and 6 to 10 times daily in paralysis. The use of the tablets is to be preferred, on account of the accuracy of the dose.—(*Deutsche T. Wochen*, 1907, No. 13, 14.)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

AN UNUSUAL FOSTER MOTHER [*Alexr. Levie, F. R. C. V. S.*].—Record of a case which is illustrated by photo: A blood

mare has a foal, she dies two weeks after with twist in the bowels. A cow was procured to provide milk for the foal. The youngster took readily to drinking milk from the pail. On the fourth day after the mare had died and as the cow was being milked, the foal poked her nose in the pail, and as the man was milking the cow tries to hold the teat in the foal's mouth, she eagerly grasped it, and ever since of her own accord sucked the cow. The photo shows the foal sucking the foster mother at the age of nine weeks old.—(*Veterinary Record*.)

MAMMARY TOXOEemia OR PSEUDO-MILK FEVER [*Edward R. Symthe, M. R. C. V. S.*].—Concise story of six cases unassociated with the act of parturition, and which the author thinks is the result of toxic poisoning arising from the mammary gland. The first case occurred in a cow three months in calf. The second was six months. The third was barren and had a calf the previous year. She had then milk fever. The fourth was also barren. The fifth was due to calve in a week and the sixth was two months in calf. All had about the same symptoms: recumbent position, inability to rise, unconsciousness. All were treated in the same way, that is, the usual treatment of milk fever, and all recovered without difficulty in a few hours. Usual injection of the udder was resorted to in all. The success of the treatment proves the trouble to be an infection purely of the udder, as previous treatment without the injection resulted in many fatalities.—(*Veterinary Record*.)

PROLAPSUS ANI IN A PARROT [*E. Wardrop, M. R. C. V. S.*].—Since three weeks the poor bird had the posterior part of its intestine protruding for about one inch. This was highly congested and discolored. Shown to several parties, no one had seen fit to take care of the animal and had given an unfavorable prognosis of the case. The author applied the following treatment: The feathers were clipped around the anus, warm fomentations applied to the bowel for an half hour, and with the aid of a little vaseline, with careful manipulations the intestine was returned into its place. The finger was kept over the anus for a while, or until all straining had subsided, and the bird placed in its cage and has been well ever since.—(*Veterinary Record*.)

CROUCHING [*Lieut. H. T. Ryan, A. V. C.*].—This is the name which the author thinks best for a condition or disease which he has found very common in his practice. It attacks all animals, males or females, but yet has not been seen in stallions. It is generally observed when the animal is being mounted, and

it appears as if the rear of the arch of the saddle was hurting the back and that the animal was flinching from the pain. The horse moves along for a few yards with the hind quarters dropped and hocks bent, but very soon assumes the normal position and goes along all right. The author has observed this trouble more in India than in England. He has also noticed that the same animal doing the same work, using the same saddle and having the same attendant, the crouching ceased when taken to another part of the country and recurred when the animal was taken back to former place or to certain others where the condition existed. Lieut. Ryan has made careful studies of this condition and looked eagerly into what was the cause. Careful examinations in relation to the effects of bad saddling were taken into consideration, but in the many cases that were studied the condition of the saddle could not be accused as the cause of crouching, which in some cases were such as to render the animal entirely useless. Many forms of treatment were also put to test, but only one gave him good results and gave positive recoveries, it was a change in the diet of the animal. Indeed, let us read what the author says: "I tried a whole series of experiments in foods and different foods and combinations of foods, and I found that after six weeks animals were cured. I found that when the ration of green lucerne was stopped a marked improvement set in and all symptoms of crouching disappeared within seven days. Once the animal was put back to his diet of lucerne, within three days all the symptoms would return with the same severity." If, however, instead of giving the usual ration of 10 or 15 pounds of lucerne, which is accompanied with the appearance of crouching, that plant is not administered the disease will disappear entirely. The observations of Lieut. Ryan are quite numerous and prove the value of his investigations.—(*Veterinary Record*.)

DENTIGEROUS CYST IN A FOAL [C. W. Townsend, M. R. C. V. S.].—First case of this nature met by the author, a nine months filly had a swelling about the size of an orange near the base of the off ear. There was a small hole on the concha and profuse discharge flew from it. A probe introduced in the fistulous tract came in contact with a hard substance, a foreign body of some kind. After disinfection an incision was made upon the swelling, white creamy pus was removed and a cavity exposed with a hardened body enclosed in a thin membrane. This was removed, the parts scraped with a curette and dressed with weak solution of iodine. Recovery was uneventful. The cyst

was somewhat like a molar tooth and measured barely two inches in length.—(*Veterinary Journal*.)

INTUSSUSCEPTION OF THE ILEUM—PROCTOPEXIA AND RECOVERY [*F. J. Taylor, M. R. C. V. S.*].—Eight months' fox terrier has had catarrhal diarrhœa for a fortnight, seemed to have no abdominal pains, except constant desire to empty his bowels. When seen he had prolapsus of the anus about 8 inches in length. When this is returned the intussusception can be felt with the finger. The prolapsus returns as soon as an evacuation takes place. "Laparotomy is performed, the intussusception reduced "by gentle mechanical traction and the bowel sutured to the "abdominal wall by three sterilized gut sutures, the bowels were "carefully inflated with a warm oily enema, which was pressed "through the lately intussuscepted portion by the fingers before "closing the abdominal wound." The abdomen was closed with Lempert's sutures and bandaged. Recovery was uninterrupted.—(*Veterinary Journal*.)

A CASE OF RANULA IN THE HORSE [*C. Aggio, M. R. C. V. S.*].—Valuable huntress is disabled, as she has in the mouth a large jelly-like swelling on the off side of the frœnum of the tongue. She grew worse and in the evening the swelling extends to the tongue and the lips. A bold incision is made through the swelling under the tongue and the contents appear looking like jelly. Chisolm lotions were prescribed. Improved; the next day she grows bad again, when the tongue protrudes and is much swollen. An incision is made from the base of the tongue to the apex, and in some hours the animal was much relieved. Boracic acid and glycerine completed the treatment, which had to be kept up for fourteen days.—(*Veterinary Journal*.)

TWO INTERESTING OUTBREAKS OF VEGETABLE POISONING [*C. Aggio, M. R. C. V. S.*].—A number of yearlings, heifers, were turned out into a field where hemlock was in great quantity, and of which the heifers partook freely. Soon one and two others showed signs of sickness. Diarrhœa, with clotted blood, sunken eyes, staggering gait. All the animals were taken off the pasture, treated with tannic acid and glycerine night and morning, and in a few days all had recovered. Two ewes had died. They had been off their food for some days, had vomited and been unable to rise. There were others which did not look well. Post-mortem showed inflammation of the stomach. While examining the other animals and looking for the condition of the pasture it was found that the animals had

an opportunity of eating cuttings from laurel trees thrown in the pasture. Treatment with linseed oil, oatmeal gruel and whiskey was ordered. Nine other animals died.—(*Veterinary Journal*.)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

SARCOMA IN THE LONG VASTUS MUSCLE OF A MARE [*Dr. Felice Cinotti*].—In 1904, a bay mare, fifteen years old, was operated and recovered of a sarcomatous growth of the base and left side of the tail. Two years later she came before the author because, since a few weeks, she has on the outside of the lower part of the right thigh a tumor which is rapidly increasing in size. As big as a man's fist, the mass is covered with skin not adherent to it. It is rather loose in its deep attachments, well defined, with edges édematous; it is not painful and can be handled without giving rise to any manifestations on the part of the animal. The mare was pregnant and otherwise in excellent condition; one exploring puncture and examination with the microscope revealed its sarcomatous nature. After waiting for the delivery of the mare, she was cast and prepared for an operation, the growth during that time having considerably enlarged and being as big as the head of a boy. A large incision, U shape, was made and a flap of skin 18 centimeters dissected and raised by an assistant. With another incision of the same shape and dimensions made on the aponeurosis underneath the neoplasm was exposed and removed, beginning the dissection by division at the curve line of the U. It was found that the growth had extensive adhesions with the semi-tendinosus, gastrocnemius and long vastus. The removal demanded careful dissection on account of the large trunks of nerves surrounding. The tumor taken off, there remained a large cavity, surrounded by tissues apparently healthy. The wound was closed with strong sutures and recovery was comparatively free from any serious complications. The growth weighed 1,325 grammes, was 21 centimeters long and 13 centimeters thick. Several months later, the mare had to be killed, as suddenly numerous tumors made their appearance on the stump of the tail, under the skin of the thorax and abdomen, in the mammae and in the intermaxillary space.

Their rapid development interfered with the general condition of the animal and she had to be destroyed. Growths of the same nature were found in the lungs, heart, subcutaneous tissue, kidneys, inguinal and mesenteric glands, in fact all over the body.—(*Il Nuovo Ercolani*.)

FRACTURE OF THE OS PEDIS IN A HORSE [*Dr. Felice Cinotti*, of the Veter. Institut. of Pisa].—While in harness, this horse got frightened and ran away, injuring both of his hind feet terribly, and after a long chase, was at last secured. Both feet had been wounded by one of the hind shoes, which had become partially loose, but the left foot was the most injured. The animal received such attention as the indications seemed to demand, but did not do well, and he was brought to the attention of the author, who, after casting the animal, made a minute examination, which revealed a rather bad condition of things. The wall of the foot was broken, the velvety and the podophyllous tissues were torn and fistulous tract were running down to the os pedis, but, although this felt rough to the probing, no necrosis or other lesion was found on it. Notwithstanding the most careful antiseptic dressing applied after removal of diseased structure and all facility kept for the wound to discharge and to heal, no improvement was obtained after the operation. After waiting a few days and the dressing once taken off, although the wound had improved in appearance, while probing the fistulous tract that run to the os pedis, there was received the impression of a piece of bone being loose. This was indeed the case, and with a fine pair of forceps a fragment of the third phalanx was extracted. It weighed 4 grammes and measured 52 millimeters in length. It was 19 millimeters in its middle. The animal grew worse rapidly and had to be destroyed. There was nothing found at the post-mortem examination of the other foot.—(*Il Nuovo Ercolani*.)

COMPLETE TRANSVERSAL FRACTURE OF THE SCAPULA IN A DOG; FRACTURE OF THE OLECRANON IN A DOG [*Dr. Felice Cinotti*].—The first of these cases was observed in a dog that got injured by being struck by an automobile. The left leg was the seat of the trouble and the diagnosis easy to make, although considerable swelling existed on the scapular region. This prevented the immediate application of an immovable dressing and required four days of local treatment to have it subside and allow the application of the bandage of Delwart, made solid with a coat of resin on its outside. The result was perfect, and in thirty days the bandage was taken off and the

leg in condition to receive methodic massage and moderate gymnastics. In the second case the dog got injured in trying to jump a ditch. The dog miscalculated his effort, and in coming to the ground exhibited great lameness of the left fore leg. While standing the animal rests himself alongside the wall, the shoulder is less oblique than that of the opposite side, the arm forms a smaller angle at the elbow joint, which is much lower and flexed. In manipulating the leg the elbow is found painful, swollen, and in flexing it to excess it is noticed that the muscles are not so tense as they ought, and that the top of the cubitus is formed of two pieces. It is evidently a simple, transversal fracture of that bone without cutaneous complications. Extension of the elbow gives a plain sound of crepitation. The owner having objected to the metallic suture of the two fragments of bone, a simple dressing with immovable bandage, the leg being placed in extreme extension, was applied as well as possible. After 27 days union was solid and a large callus formed. With a little time the recovery was perfect.—(*Il Nuovo Ercolani*.)

QUADRIGEMINAL DELIVERY IN A COW [Dr. Umberto Selan].—This animal has already had four deliveries, and every one passed off normally. This time her pregnancy was not accompanied with any thing particular. One day she suddenly made violent efforts, which were followed by the rupture of the bags and escape of abundant quantity of fluid, and giving in about one hour after the expulsion of four little calves. The first one was a male and came out dead. The second lived but two hours and the others did not survive but a very short time, notwithstanding all the care that they received. They were all delicate, a little smaller than a small terrier and weighed in average altogether 8 kilograms.—(*La Clinica Veterinaria*.)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

PURULENT PLEURISY TREATED BY THORACENTESIS IN A COW—RECOVERY [Mr. P. Bergeon].—This case occurred in a five years old cow, which had the following history: In August, 1903, she had a swelling as big as the fist, back of the elbow, about the middle of the chest. This was puffy and painful to pressure. Blistering ointment was applied and three days

after fluctuation was evident and a large abscess was open, giving escape to reddish gray pus, having a very offensive odor. In exploring the cavity a sharp body was detected and removed. It was a fragment of a long knitting needle, rusty, and measuring about seven centimeters in length. The owner then remembered that six months previous the cow had coughed a great deal for several days, and it was probably at that time that she had swallowed the needle. The abscess once open was treated, and in three weeks recovery was complete. In May, 1904, the animal was taken sick and presented some alarming symptoms. Complete anorexia, anxious countenance, contracted features. Pulse small and thready. Dulness on percussion on the lower third of the left side, and well marked on an horizontal line. No rale or abnormal sound on auscultation. No respiratory murmur, where there is dullness on percussion. Nothing abnormal on the right side. Remembering the accident of the previous year, an abscess of the lungs is suspected and serious prognosis advanced. Treatment: Severe mustard poultice, pilocarpine and expectorating electuary. As the animal seems to grow worse, thoracentesis is performed and six litres of strong smelling and grayish pus are extracted. Four litres of weak solution of iodine are injected to wash the cavity. The next day four more litres of pus are taken away and same washing performed. After a few days, as there is no improvement, a free incision is carefully made and a drainage tube inserted, allowing the escape of the pus and the iodine washing to be easily performed. After two days there is a marked improvement, which continues to manifest itself in such a manner that, after ten days, all treatment was stopped and soon recovery was completed. This satisfactory result is justifying the resort to the treatment, specially with animal of great pecuniary value.—(*Revue Veterinaire.*)

TREBLE SPLEENS IN A CALF [*Prof. G. Petit*].—If double spleen are met now and then, case of triplicity are rare. Yet, it must be remembered that anatomo-pathologists of man have mentioned under the name of accessory spleens supernumerary small spleens, which may reach the number of twenty. The three spleens of this case were obtained from a five weeks old calf. They were perfectly independent of each other and one, larger than the others, had a notch, which seemed to indicate that it resulted from the union of two organs. In which case the number of spleens in that case may have been four instead of three.—(*Bullet. de la Soc. Cent.*)

UNEXPECTED AND FATAL COMPLICATION IN A CASE OF EQUINE PASTEURELLOSE [*Mr. Mounet*].—Called in consultation near a large percheron stallion of eight years, the author found a true case of Pasteurellose, for which he prescribed some little change in the treatment and a change of hygienic surroundings. At first the animal seemed to gain and improved. After a few days, however, changes for the worst manifested themselves. There was a relapse indicating troubles towards the lungs. A severe treatment was started, but with no satisfactory results as to the manifestations of the thorax, others came to be added, in the shape of colics. These kept up, increasing, and the animal died. Post-mortem: The region of the sheath is infiltrated with urine. The intestinal organs are almost free from any lesions. The parietal peritoneum is much inflamed and the abdominal cavity contains about two or three litres of cloudy and dark colored urine. The bladder is ruptured; very large; it must have been very distended before giving away. The rupture is transversal and measures 10 centimeters in length. It is situated at the inferior face. The liver is big and soft. Kidneys and spleen congested. Lungs show lesions of congestion. Heart is presenting nothing peculiar. The situation of the rupture of the bladder was such that urine was escaping readily from the penis while another portion of the renal secretion was poured into the abdomen.—(*Rvenue Gener. de Mede. Veter.*)

ENZOOTIE OF CATARACT AMONG HORSES [*Prof. C. Cuny*].—This was observed in a farm situated on a mountain, where the horses were kept in two stables, apart from each other by 50 meters. There never has been any sickness in the stock. In one stable there are four horses out of eight which have double cataract and one-fifth which has only keratitis. In the other stable only three horses are kept, and one has a unilateral cataract. In the first barn the first horse affected presented nothing wrong until he was observed to act queerly, hesitating in walking, knocking himself against walls and surrounding objects. Examined, he was found with two cataracts. The second horse was sixteen years old, he behaved like the first and his condition detected in the same manner. Several months after the third horse was taken, but he had cataract only in one eye. The fourth had keratitis and could yet see perfectly. His cristalline lens was still clear. Some time after the fifth horse observed also behaving in the same way, and when examined revealed a double cataract. In the other stable the only horse affected had unilateral

trouble. No cause could be attributed to this manifestation, except that all the horses were obliged to drink out of a kind of reservoir, in which the remains of the stables could run freely, and it was supposed that a peculiar auto-intoxication was the result of this dangerous hygienic arrangement. Better hygienic conditions were the only thing that seemed proper to prescribe.—(*Journ. de Zootechn.*)

RUPTURE OF SPLEEN [*Mr. Rouillier*].—A horse is walked slowly for an hour, he seems sick suddenly and is brought to the author, who notices the following condition: The animal is standing stiff on his four legs, he is covered with profuse perspiration, head carried low, facies anxious, mucous membranes pale, muscular tremblings at the soulder and the croup; frequently looks toward his flank. Temperature 39.7 degrees. Breathing short and accelerated. The horse has a weak and moaning wind. Respiratory murmur accelerated at auscultation. Borborygms in the abdomen. Pulse small, thready and difficult to take. No marks of external lesions. Internal hemorrhage is suspected. After half an hour of sickness the horse drops, struggles for a few minutes and dies. Autopsy: Abdominal cavity contains an enormous quantity of blood. Stomach, large and small intestines are normal. The spleen presents a rupture, cause of the sudden death. The serous coat is raised and separated from the tissue of the spleen. On the posterior border there is rupture measuring 15 or 20 centimeters in length. On that membrane, at a point corresponding to the left hypochondriac region, there is a large ecchymotic spot, and below it the tissue of the organ is torn and surrounded with blood clots. There was no anatomical lesions; no suppuration or atrophic or hypertrophic lesions.—(*Recueil de Medec. Veterin.*)

It is estimated by competent authority that over 45 per cent. of the food consumption of the better classes in the United States consists of animal and dairy products.

THE Government of South Australia has appointed an assistant veterinary surgeon to Veterinarian Desmond. Dr. Desmond is now engaged in an investigation and scientific study of an illness commonly known there as "dry bible." This malady is reported as being very prevalent in South Australia and disastrous in its effects.

ARMY VETERINARY DEPARTMENT.

LET US HAVE AN ARMY VETERINARY BOARD AT FORT RILEY.

In the last issue of the REVIEW I attempted to explain the causes of the discontent and unrest that have been noticeable of late among the veterinarians of the army, and recommended such changes in the proposed Congressional legislation as seem most urgent to meet the worst features of our present professional position.

But while we are waiting for the betterment of our position by the legislation that we are seeking, we must do something ourselves to improve our status. It is evident that we have come to understand our rights in the army as never before, and as long as such feeling is kept within bounds, it is a healthy sign. However, I would not have any one of us forget that the flag under which we serve, giving us rights, imposes in turn duties upon us that can be variously interpreted according to our intellectual accomplishments. Aside from the duties demanded of us as specified in army regulations, orders and circulars, there are also those that have come to us by the "customs of the service." All these may be classed as "ordinary duties," for which—to use an American idiom—we are paid for. But whenever any class of men who form a branch of an institution, such as the army is, reaches a higher level of development and usefulness, there evolve duties for which no pay is given, such as private study, investigation and action, which benefit more directly the institution as a whole than the single individuals comprising it. Look into the development of any striving institution and we shall find that it rests upon the voluntary and unselfish labors of its members.

In our case we can materially aid the development of a veterinary service worthy of its name by our individual study of current literature bearing on our profession in the army and by contributions to such literature in periodicals of high standing; we can experiment with improved methods of veterinary practice in garrison and field service and perform even a certain amount of scientific research; we *must* look after our own affairs in the army and make such recommendations as seem necessary and

practicable of enactment by the proper authority; and we *should* assume the role of counselors to the War Department in matters pertaining to veterinary science and practice, and not leave the incentive to do so in strange hands, as is now the case.

Whether we are ripe for such advanced duties and the responsibilities that will go with them remains to be shown by our efforts. The old order of things has gradually been broken with, for it did not work that way and could not. Infusion of new blood has taken place and few old-timers remain on our roster, who were supposed to hold us down. Yet, we should not point the finger at the very few among us who are accused of having no interest in our mutual welfare; we cannot lick them into shape, nor should we play the role of moral reformers. Men choose the pursuit of happiness according to their own interpretation of the Clause in the Constitution—one will find it in frolic, the next in serious endeavor.

What I propose is that all those among us who have thrown in their lot with the army for good or evil, who think much of our rights and more of our duties, who still hope to see realized some day the establishment of an up-to-date veterinary organization in our army, and who are willing to work for it, combine to form a working unit for solving the problems that are now before us, or that are to come. Individual effort in this line is weak. It would certainly be unwise and impractical to start such work without a central soul. Without a chief veterinarian, or substitute for one, we would rather fritter away our time and effort; in fact, we would risk to have reports and recommendations go forth from our forty-two veterinarians that might be as diametrically opposed as night and day. Such individual attempts at self help would only produce a smile of derision in Washington, and it would be said of us as is now said of the Philipinos: *They are not ripe for self-government*. We have a nucleus for such a central body in our army committee at Fort Riley, and need not search for another place or persons. I believe the Riley veterinarians have done good service for our cause by intelligent attention to duties that were new, and according to disinterested officers they have been successful. There always will be a greater number of veterinarians at Riley than at any other post; it has been made the centre of instruction in all that pertains to the army horse; it is the seat of our veterinary examiner, and will have in not distant time an army veterinary school. It is, therefore, near to ask our colleagues at Riley to

extend their sphere of usefulness and to constitute for us a "Veterinary Board," to whom we could refer our individual work for approval and transmission to the proper authority. I am confident that the veterinarians stationed there are capable to constitute such a board and to perform the work indicated, to which all others, stationed elsewhere, should voluntarily contribute each one according to his choice and accomplishment.

Some, doubtless, may pronounce such a plan as Utopian. Let me briefly refer them to the tremendous progress brought about in our profession by our various veterinary associations, that depend on nothing but the free will and enthusiastic support of its members. Some twenty-five years ago we hardly had a veterinary profession in America; we have one now that is keen and aggressive in its just endeavors. But associations can only have periodical sessions, whereas we in the army need more permanent deliberations. The results of the labors of such a Veterinary Board would soon tell. If sensible, broad-minded and far-sighted, not a nagging nuisance or imposition upon the army, its efforts will be readily appreciated by our military authorities and would naturally and without strain lead up to the formation of an official veterinary organization, and this much sooner than by mere attempts at periodical legislation.

We are on the upper grade. The foundation has been laid, construction has begun, and it is our duty to keep on building up. What work, then, can we lay out for our proposed Veterinary Board at Fort Riley?

MEASURES RECOMMENDED FOR CONSIDERATION AND ACTION.

1. A bill entitled: "To provide for raising a volunteer army of the United States in time of actual or threatened war," was introduced into Congress February 18, 1907, by Senator Warren (§ 8574). It is a comprehensive measure, outlining plans for the organization and mobilization of the proposed army. It provides for the enlargement of every staff department, of the line and of all possible commands and units in minute detail. There is a mighty army on paper, putting every man in his place. No mention, however, is made of the army horse, be it than in the terse provision: "Remount and horse depots," from which alone no mobilization of horses for an army on war footing can come. No mention, further, is made of a "veterinary service," nor is anywhere, in all the lengthy 20 sections of the bill, the "veterinarian" to be found. This omission of a needed branch of an

army on war footing cannot possibly be explained by oversight, for the bill bears proof everywhere of most careful work and commendable foresight. Moreover, some of us know that a little over two years, when this bill was first worked out, something resembling an Army Veterinary Department had been agreed upon. The present status of the veterinarians was not changed, but graded pay and sufficient numbers had been provided for, about as follows:

For the Line—One assistant veterinarian (second lieutenant's pay) for each squadron of cavalry and battery of artillery; one regimental veterinarian (first lieutenant's pay) for each regiment of cavalry and field artillery; one inspecting veterinarian (captain's pay) for each cavalry and artillery division; one chief veterinarian (major's pay) for each army corps. For the mounted engineers and signal companies and other mounted commands one assistant veterinarian for every 300 horses.

For the Remount Division (under the Quartermaster General)—One chief veterinarian (lieutenant colonel's pay), three veterinary inspectors (major's pay) at depots, such additional assistant veterinarians, with pay of captain or lieutenant, as may be necessary at depots or purchasing stations.

Speculation as to the reason or cause for the omission of this entire provision is interesting but fruitless. We simply had nobody in Washington to look after the horse and the veterinarian. It is certainly our duty to spread some enlightenment on these points, and have the above section re-enacted into the bill at the next session of Congress. It seems incredible that any intelligent military man can persuade himself into the notion that a modern war can be entered into and brought to a successful termination without careful provision for the acquisition of suitable army horses and for keeping them in health, which means an elaborate remount service and an organized veterinary service.

2. Another new bill, providing for a "Remount Division" of the Quartermaster's Department, will undoubtedly be introduced into next Congress, as suggested by Brigadier General Alshire, Quartermaster General, in a paper read before the General Staff some time last winter. This matter has been agitated for many years, it is ripe for legislation and will surely be passed, as horse breeders are interested in the subject. The paper was reprinted in the *Army and Navy Register* of March 9, 1907, and should invite the careful study of every army veterinarian. As far as the veterinarians, that are to be a part of the scheme, are

concerned, they were only broadly mentioned, and it is recommended that one chief veterinarian at the Washington Remount Office and one to two veterinarians at the Remount Depots, are to be provided for. No suggestion is made about the rank or pay and allowances that these veterinarians are to receive, evidently leaving this matter to other authorities to decide. A golden opportunity is offered here to do the right thing at the right time. I recommend that those who are not familiar with the system and methods of Remount depots, study the report entitled: "Remount Systems Abroad," published as No. XXXV., War Department, Military Information Division, April, 1902. As experts in this matter, we should at once advise the proper authorities as to the necessary provisions to be made for veterinary service at these depots. All European armies have high-ranking veterinary officers connected with the Remount service commensurate with the responsible duties, and here we can drive in a timely wedge into our hampered usefulness.

3. The *Army Register* should contain our names and records. We are now by law entitled to a place in this annual publication, and if there is any doubt, reference may be made to the enumeration of honor graduates of private military schools which have no connection with the army and yet occupy a whole page. The veterinarian is also omitted from the organization table, merely from old custom, and we should be taken up in a special rubric at the proper place. If we all send our names and records to Riley to be compiled there and forwarded, it will dispatch this matter.

4. The "Army Regulations," as regards the status, duties, etc., of veterinarians, call for our earnest thought and action. The paragraphs have been left as they were twenty-five years ago, as far as the spirit is concerned. We can help ourselves personally and the veterinary service immensely if this matter is worked out by us and submitted for approval at the proper place.

5. Our Riley veterinarians should experiment with veterinary field equipments, proper pack saddles for same, etc. The ancient "Veterinary Panier," and the new one, are masterpieces of green-table pedantry and poor workmanship. The leaking tin cans! No more need be said to have every veterinarian remember his misery in the camp. A great field for useful work opens up here. It is *our* duty to start this work and keep it up. Surely, it would be appreciated by the military authorities also. Let us all butt in and contribute our share to help the Riley colleagues

along. We all have made our individual experience in this line, and many of us have constructed our outfits according to individual taste. A pack-horse is an absolute necessity, led by a panier. I shall make a report to Riley on this matter as soon as I can spare the time. Please contribute all your share.

The above merely touches the subjects for our first consideration and action. Many more wait for us to be taken up, as soon as our friends at Fort Riley feel themselves ready to commence this work. It will bear fruit.

OLOF SCHWARZKOPF.

Camp Statsenburg, P. I., August 19, 1907.

STATUS FOR THE ARMY VETERINARIAN.

To secure the above desideratum, it becomes necessary, as follows:

A congressional delegation to consult the General Staff of the War Department, at Washington. Members of Congress from different states should be pledged to exert influence in behalf of the passage of an act, insuring at least a grade, which will place the United States Army Veterinarians on an equal footing in all respects with commissioned officers.

Those in the service to-day, under present regulations, are enjoined from any such solicitous measures. Can the American Veterinary Medical Association accomplish it? Their legislative committee is equal to the task. One member from the District of Columbia, New Jersey, Ohio, Minnesota, and one from Colorado should be sufficient.

Congressmen from these respective states, selected by the legislative committee, could handle the situation.

A legislative committee at Fort Riley, consisting of Army colleagues, has been tried, but their hands found tied.

L. E. WILLYOUNG, *First Field Artillery.*

RAILROAD DISEASE OF CATTLE.—"I am more than grateful to Dr. J. P. O'Leary for even a name for the disease which he describes in his translation as 'Railroad Disease.' All dealers in this locality who ship cattle any distance suffer a loss from this malady, but never before have I seen it named or described." —(*J. F. De Fine, D. V. S., Goshen, N. Y.*)

We are just in receipt of the announcement from Secretary Blair, of the annual meeting of the VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY, and take occasion to urge the veterinarians of Greater New York to turn out as strong as possible, as, in addition to the customary attractive program, this is the occasion of the election of officers for the coming year.

CORRESPONDENCE.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

BATON ROUGE, LA., November 15, 1907.

Editors, American Veterinary Review:

DEAR SIRS:—The International Congress on Tuberculosis will be held in Washington, D. C., September 21-October 12, 1908.

From a preliminary announcement received from Dr. John S. Fulton, Secretary-General of the Congress, Section VII., over which Dr. Leonard Pearson, of Philadelphia, is to preside, is one which should be full of interest to all members of the veterinary profession, as its work will deal with "Tuberculosis in Animals in its Relation to Man."

Many of us are more or less familiar with the important deliberations of former congresses of a similar character, and more particularly the section which has to do with subjects relating to comparative medicine. It may be remembered that it was at the London Congress, in 1901, Professor Koch startled the medical and veterinary medical sanitary world by his statement relative to his belief in the duality of the bacillus tuberculosis, and at which McFadyean, of London, and Ravenel, of Philadelphia, and others took issue with him. Still, if this sweeping assertion of the great German has accomplished nothing more, it has certainly been the means of stimulating more research to be made to find out the truth, and, in consequence, has resulted in more accurate information being gained and disseminated regarding tuberculosis than possibly anything else could have done.

The Washington Congress will bring together a large number of the world's most noted medical and comparative medical savants, and the deliberations of these men will be nothing short of a most valuable and instructive intellectual feast to all who avail themselves of the opportunity to attend.

An official invitation has been extended the American Veterinary Medical Association to be represented. In a recent communication from the Secretary-General to the writer there occurs the following: "It is the hope of the committee that the American Veterinary Medical Association will be officially represented

at the Congress, and that a great many members of the association will be active members of the Congress."

It seems to me that here is an opportunity that we, apart from the official representation, as an association and as a profession, cannot afford to miss. This noble work in the great cause of humanity, in addition to its economic importance, is *our* work as much as it is that of the medical profession. In fact, I might say, *more so*, because it is the province of the veterinary profession to deal with the basal factor, so to speak, viz.: the tuberculous animal, whose infected products carry with them so much misery and death to the human family.

It may be thought rather early to draw attention to this Congress. However, my motive in doing so is to emphasize the importance of it, and that the interval may be profitably spent in preparation, in order that the profession may be able to show, when the time comes, not only to the Congress, but to the world, the part it plays, and the deep interest it takes in the relief of human suffering and death, which is occasioned by the destructive influence of the "great white plague."

Coming as it does almost immediately after our next annual meeting in Philadelphia, it is to be hoped that many members of the association may be able to make it convenient to attend the Congress and take an active part in the work, which they have been officially invited to do. And it is further to be hoped, that as many as possible of the profession at large will become active members of the Congress, avail themselves of this splendid opportunity to mix with representative international sanitarians, and benefit by the proceedings as a whole. It is an opportunity that the veterinary profession of America should not miss. Nay, cannot afford to miss.

W. H. DALRYMPLE,

President, A. V. M. A.

INTERPRETATION OF THE PROVISIONS OF MICHIGAN'S NEW LAW BY THE ATTORNEY-GENERAL.

LANSING, October 30, 1907.

*Dr. L. L. Conkey, President Grand Rapids Veterinary College,
Grand Rapids, Mich.:*

DEAR SIR:—I am in receipt of your communication of the 22d instant, in which you state that the Ontario Veterinary Col-

lege, commencing with the present fall term, prescribes a course of three years. However, this only applies to students entering the college this fall, and those who entered in 1906 and attended during the 1906-1907 session will be graduated next March, after having attended the college but two years. You ask whether these students will be entitled to registration in this State upon presentation of their diplomas from this institution.

You also state that it appears from the catalogue of this college that the annual sessions commence October 16 and close March 30 following, thus making the session each year only five and one-half months' duration, and ask whether the graduates of this college would be entitled to registration under the laws of this State.

For answer thereto, I would say, that section 3 of Act 244, Public Acts of 1907, regulating the practice of veterinary medicine and surgery in this State, provide that

"It shall be the duty of the said board from time to time, during each year, to provide and furnish to its secretary a list of the regular colleges having a curriculum of at least three years and of at least three sessions of six months each, having the authority to confer the degree of doctor of veterinary medicine, doctor of veterinary science, or doctor of comparative medicine or veterinary surgeon."

Section 5 of the act provides as follows:

"From and after January first, nineteen hundred and eight, it shall be unlawful for any person to practice or attempt to practice veterinary medicine or surgery in any of its various branches, unless he shall be duly registered by the State Veterinary Board. No person shall be registered by the State Veterinary Board as a veterinarian or veterinary surgeon until he shall have furnished satisfactory proof of his identity, and that he is the lawful and regular possessor of a diploma from a regular veterinary college or veterinary department of a State institution of learning or college of medicine having a curriculum of at least three sessions of six months each, and requiring personal attendance of its pupils, and that said diploma was issued by such school or college direct to him."

From these provisions of the act it is clear that unless a veterinary college has a prescribed course of at least three years,

with sessions of not less than six months in each year, it is not entitled to be listed as a regular college by the State Veterinary Board. If, therefore, the Ontario Veterinary College prescribes sessions of but five and one-half months duration each year, it should not be listed by the State Veterinary Board, and its graduates would not be entitled to registration under the laws of this State.

If this college has a prescribed course of at least three years, with sessions of at least six months in each year and requires personal attendance of its pupils, it is entitled to be listed with the State Veterinary Board, under the provisions of section 3 above referred to. It does not, however, follow that the class of students who will be graduated therefrom next March, after having attended the college but two years, will be entitled to registration upon presentation of their diplomas.

It is my opinion that it is contemplated by this act not only that the college shall have a prescribed course of at least three years, with sessions of at least six months each year, but that the applicants for registration shall have completed the prescribed course of three years in the institution.

Respectfully yours,

(Signed)

JNO. E. BIRD,

Attorney General.

"ESSAYS ON HORSE SUBJECTS" is the title of a neat little volume of Dr. F. C. Grenside, of New York City. For a number of years this eminent veterinarian and horseman has been contributing some splendid articles occupying the borderland between the provinces of the veterinarian and horseman. Many of these were published in the REVIEW, some in the *Breeders' Gazette*, and others were read before veterinary association meetings. Being a recognized authority on these subjects, the profession will gratefully welcome this neat brochure, while the student of the horse will find great benefit from its perusal.

PRACTICE in the eastern cities has been very quiet during the early autumn.

W. W. CURRY, D. V. S. (A. V. C., '87), Hackensack, N. J., was elected Coroner of Bergen County, New Jersey, at the recent election.

DR. M. J. JONES, JR. (O. V. C., '05), Blanchester, Ohio, was married November 23, to Miss Marjorie Jackson, of Cincinnati.

BIBLIOGRAPHY.

ESSENTIALS OF MILK HYGIENE. A practical treatise on dairy and milk inspection and on the hygienic production and handling of milk, for students of dairying and sanitarians. By C. O. Jensen, Professor in the Royal Veterinary and Agricultural College of Copenhagen, Denmark. Translated and amplified by Leonard Pearson, Dean of the Veterinary Faculty of the University of Pennsylvania, State Veterinarian of Pennsylvania, Member of the Advisory Board of the State Department of Health and Member of the Board of Health of Philadelphia. Illustrated. Philadelphia and London: J. B. Lippincott & Co., Publishers, 1907. Pages 275, \$2.

This is an indispensable book to the veterinarian who would change a senseless system of testing milk when offered for sale to one of a rational and safe supervision over the source of supply—a supervision over the production and handling of milk, including regular veterinary expert examinations of all dairy cattle and the enforcement of a compliance with hygienic and sanitary regulations. The bacteriologic and microscopic examinations of milk made in public health laboratories demonstrates and emphasizes the necessity for beginning the inspection with the cow herself and the conditions under which she is kept, instead of with the product when offered for sale.

The whole field of milk hygiene is covered in a concise and comprehensive, if not exhaustive, manner. The data of the work is essentially the substance of lectures delivered by Professor Jensen in the Veterinary and Agricultural College of Copenhagen, and was originally published in the Danish and German languages simultaneously. For the English edition, now fresh from the press of J. B. Lippincott & Co., the profession is indebted to Professor Pearson, not only for its translation, but for its amplification and adaptation to American use.

Added to the work proper are six appendices containing data on the milk supply of Copenhagen, German instructions for producing nursery milk, a score card for dairy farms, the report of the Royal Commission on Tuberculosis, the plan of the Milk Commission of Philadelphia and of the Milk Commission of Essex County, New Jersey.

On account of its historic value, the agreement of the Medical Milk Commission of Essex County, New Jersey, for the production of "certified milk," dated May 9, 1893, which was the first provision made for "certified milk" in America, is reproduced in full.

"THE ESSENTIALS OF MILK HYGIENE" is a practical and valuable contribution to our science and literature. An intelligent application of its teachings would greatly benefit agricultural and commercial interests and produce marvelous results in safeguarding human life from infection and from unnecessary disease, suffering and even death.

The REVIEW therefore commends this work to the profession, feeling confident that it will not disappoint either the critical or the practical reader.

W. H. L.

A MANUAL OF VETERINARY PHYSIOLOGY. By Colonel F. Smith, C. B., C. M. G., Army Veterinary Staff, Fellow of the Royal College of Veterinary Surgeons, Fellow of the Institute of Chemistry. Author of a "Manual of Veterinary Hygiene," etc. Third edition. Completely revised and in parts rewritten. Illustrated. New York: William R. Jenkins Company, 1907. Pages 715.

This is an excellent work. Its chief advantage, considered from a veterinary point of view, is that the horse, and not man, is taken as the type. The ox, sheep and pig, however, are dealt with whenever their special physiology requires it. It may therefore be considered essentially an equine rather than a veterinary or comparative physiology.

The work, although not exhaustive, is thorough and comprehensive, and is an acceptable contribution to veterinary science and literature.

The requirements of the student and practitioner have not been lost sight of, and every opportunity has been taken by the author to point out the application and utility of physiological knowledge in the treatment of pathological conditions. To several chapters a special appendix on pathology is added, the one connected with the chapter on digestion is of especial merit, containing much valuable data of interest to the equine practitioner.

W. H. L.

THE report comes from the St. Joseph Veterinary College, St. Joseph, Mo., of the enrollment of seventy-six students in this new school.

OBITUARY.

WILLIAM C. FERGUSON, D. V. S.

In the death of William C. Ferguson, D. V. S., Paterson, N. J., which occurred October 12, 1907, a worthy and well qualified veterinary practitioner, aged thirty-four years, was suddenly removed from a successful and promising career of usefulness. He suffered from an organic affection of the heart, but continued in active practice until a few days before his decease. A difficult surgical operation which he had performed is believed to have superinduced and hastened his death.

Dr. Ferguson was graduated from the American Veterinary College in 1893 and located at Paterson, N. J. He was elected City Veterinarian of that municipality in 1900 and served one term in a creditable and satisfactory manner.

He was a member of the Veterinary Medical Association of New Jersey, and had just received from Secretary Lyman official notice of his election in September, at Kansas City, Mo., to membership in the American Veterinary Medical Association.

Among the many large and beautiful floral pieces sent to his funeral was a simple galax wreath from the Veterinary Medical Association of New Jersey, expressive of the esteem and respect in which he was held by his fellow members of the profession.

W. H. L.

WILLIAM C. BRETHERTON, D. V. S.

Just as our forms are about to close, word has reached the REVIEW office of the death of Dr. William C. Bretherton, he having succumbed to a complication of diseases at 9 p. m., November 24, 1907, at the age of seventy years. Dr. Bretherton came to this country from England in 1857 with his father, who was a graduate of the Royal College of Veterinary Surgeons (L.), under whom he had studied, and at once began practice in New York City, where he has continued to practice up to the time of his death. In 1883 he graduated from the American Veterinary College, in New York, receiving the degree of D. V. S., of which he was justly proud.

The Doctor is survived by a wife and a son, George C. Bretherton, D. V. S.

R. W. E.

SOCIETY MEETINGS.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order by Vice-President Amos at 2.35 p. m., at Mankato, Minn.

*Dr. Amos: Members of the Veterinary Association:—*As Vice-President of this association, I have been called upon to occupy the chair on account of the absence of our President, Dr. McGillivray, who has been unexpectedly called away on account of death in the family, and last night telephoned me to be sure and be here. We have with us Dr. Andrews, Mayor of the City of Mankato, and I take pleasure in introducing Dr. Andrews, who will address you for a few minutes.

*Dr. Andrews: Mr. President:—*It is surely a pleasure for me to meet these gentlemen here to-day, and to express to you the most hearty welcome. It is a double pleasure, because first, as the chief executive of this city, we are glad to welcome to our midst conventions of this character, conventions, indeed, of citizens, whatever their vocation or occupation. We feel that we have a pretty city to show them and some advantages that the convention may have in meeting here. I say it is a double pleasure, first, for the reason that I have stated, and second, because as I meet you gentlemen I meet those of an allied profession, of a profession akin to my own, and in my own profession I take great pleasure, and always feel that the title of "Doctor" is an honorable one. I think a great deal of veterinary practice these days, but when I began the practice of medicine, thirty years ago, I must say that the practice of veterinary surgery in these Western States did not have the standing in the community that it does now, for the reason, and the only reason, that your ranks were filled up with men who were not qualified to practice, and I used then to say: "Why don't the veterinary surgeon qualify himself better when his opportunities are so great?" With us it is not easy to get a post-mortem examination; with us it is not always easy to get dissecting material; but with the veterinary surgeon all this can be made—practically all—and dissection of subject as well as practically always he can to a

certain extent experiment, not upon the animals that he has treated, but upon the lower animals. There is a better opportunity for that perhaps than the physician has. I have never practiced veterinary surgery or practiced medicine in your line, perhaps I may say at all, for I believe in a man's sticking to his business, sticking to his trade and profession. I have frequently been consulted as to what to do for this or that animal, and under certain circumstances have given advice, circumstances when no veterinarian could be had. I was called to tie some divided arteries in a horse which had been cut by a mowing machine, because I could do that as well as a veterinarian, but it is not my profession, and had the veterinarian been at home at that time, I should not have done it. I did it to accommodate the man more than anything else. Our professions run along side by side, and after all, when it comes to the physiology and anatomy, there is a great similarity between the horse and man, and the veterinary profession will know a great deal about the human system and the physician will know a great deal about the dumb beasts, the cow and other animals. Gentlemen, I am not here to give you anything like a scientific lecture. I could not do it if I desired, and would not if I desired. There are able men amongst you who will see to that. I come to welcome you, and we will give you the freedom of the city until twelve o'clock every night, and during your sojourn here, if there is any favor that the city can confer upon you, or any special privileges, and Dr. Dell will let me know, we will only be too glad to favor you. I again welcome you, and hope you may have a successful and profitable meeting to-day. (Applause.)

Dr. Amos: On behalf of the State Veterinary Medical Association, I would call for a few remarks upon the subject from Dr. Reynolds.

Dr. Reynolds: Mr. President and Mayor of Mankato:—I assure you that it gives me pleasure to reply as best I can to this very courteous and very friendly address of welcome which we have had from the Mayor, and am sure I voice the sentiment of this association when I say that we appreciate most highly the very courteous words that come from the Mayor in his official capacity; but much more we appreciate the kind words that come from him as a medical man. We are here this afternoon and to-morrow discussing tuberculosis, glanders, actinomycosis and

milk, and various questions that have to do with both medicine, things in which we have a mutual interest, and we can readily see that Dr. Andrews does not think of the veterinarians of today as merely "firers of spavins" and merely routine practitioners, but men who see broader things and take a wider and deeper interest in things that pertain to social and political things, and welfare in general. Now, some of the members of this association I know very well are very much interested in having a closer acquaintance between the medical men and veterinarians of this State, closer relations in association work and in various other ways. Personally I would like very much indeed if we could have a paper from a physician at every meeting of our association. I would like to very much, and feel it an honor, if at every meeting of the State Medical Society of Minnesota there should be a paper from the veterinary profession. You all see the advantages of it, the desirability of that closer acquaintance and closer mutual study of those things in which we are both interested. It seems to me the day when there will be a chair of veterinary medicine in medical colleges is not far distant. I hope the day will not be far away when we will have such a chair in the University—surely the next thing to do is something about that. We appreciate very deeply Dr. Andrews' kind words and appreciate them both as a physician and as a citizen.

The next on the programme was the roll-call, which showed an attendance of thirty-one members.

The minutes of the last meeting were read and approved.

Dr. Amos: The next on the programme is the President's address. Now, I assure you that as the President is not here I am filling his chair, as I was notified last night that on account of death it was impossible for him to be here, but at the same time, he did not send his address over the telephone, and I am not going to take up much of your time to give you an address. I am glad to see so many of you here. We have a great deal of work ahead of us, and it will take all afternoon to get through with it. I did not come prepared to make an address, and if we had Dr. Cook, the orator, or his substitute, Dr. Leech, in the chair, we might have an address.

We will now proceed to the committees. The first report is the Committee on Colleges, Dr. Leech.

Dr. Leech: I did not even know I was on this committee until Dr. Mack notified me about two weeks ago that, inasmuch

as Dr. Ward was leaving the State, I was appointed. Not knowing I was on the committee I have not given it much attention, yet kept in touch as closely as could be expected from what information I could glean from work being done. I do not know of any radical work along the lines of the different colleges that we have on our list as regulation colleges. There are two colleges that have been two-year schools and are now practically three. One taken over by the government and accepted in the Dominion as a three-year school and run by the government.

The Grand Rapids School, which has always been a two-year school, is now sending out a curriculum which is superior if not equal to any. The Western School is now a three-year school. On account of the agitation created by the veterinary profession, all those attending nearly all the veterinary schools recognize that they must meet the requirements. It gives me pleasure to note that those which have made the requirements are continually in the advance.

The Manhattan School at Kansas has been voted \$35,000 to help their school. Their intention is to build a new building and improve their school. Colorado has a provision of \$30,000 in its agricultural school, and they will increase the veterinary college. Pennsylvania has been given everything asked for and now have a sufficient amount on hand, so they are absolutely independent, so far as endowment from the State is concerned. And the greatest of all, the University of Illinois, is now in a position to receive the \$250,000 voted to them by the Stock Yards Company, and the State of Illinois has voted \$30,000 for the next five years, but that is to build and equip the school, and their intention is, if necessary, to go on and make it a school fit to be called first class in every sense of the word.

I do not know of anything more, except that one of our schools has received the recognition which is unusual to receive from that source. The Veterinary College at Chicago gave a special course along the lines of meat inspection, and about 50 Canadian veterinarians came over here and took that course, and were graduated in that course, Dr. Rutherford being in attendance, and I believe the Canadian authorities made it so interesting that every man who came to Chicago to take that course was granted \$100 to help defray the expenses.

Dr. Amos: We will proceed to the next topic—infectious diseases—by Dr. McDonald.

GLANDERS.

Number of horses inspected.....	918
Number killed on inspection.....	52
Number tested on inspection.....	544
Reacted when tested.....	210
Killed after testing.....	130
Quarantined	75
Reinspected	41
Killed on reinspection.....	19
Total killed.....	201

TUBERCULOSIS.

During the past six months there have been 12,170 cattle tested, of which 805 were condemned.

There have also been tested by the State Live Stock Sanitary Board Inspector at South St. Paul 324 foreign cattle, of which 19 were condemned.

RABIES.

Since the first of the year rabies seems to be on the increase, it having been reported in 13 different counties.

Dr. Amos: You have heard the report of Dr. McDonald on Infectious Diseases. Are there any remarks or questions to ask?

Dr. Cotton: There were 12,170 cattle tested in this State during the last six months. I think this is more work with tuberculosis than in any other State in the Union.

Dr. Gould: What is the proportion of pure bred cattle of that number?

Dr. McDonald: I do not know, but in one herd of 53 I condemned 52.

Dr. Reynolds: While I cannot answer that question in figures, the number of pure bred cattle being tested in the State is increasing very rapidly, as compared with five or even three years ago. If I were guessing at it I would say about one to five.

Dr. McDonald: There would not be over one to three.

Dr. Leech: I would like to ask Dr. McDonald this question: Of those 300 head at the stockyards, were they mostly beef cattle, dairy cattle, or fancy cattle or feeders?

Dr. McDonald: They were mostly dairy cattle.

Dr. Leech: Were they tested on account of knowledge of the disease?

Dr. McDonald: A great many of them were tested on account of being shipped into the State for dairymen.

Dr. Amos: Are there any other remarks on this paper by Dr. McDonald? If not, we will proceed to the Committee on Legislation and Emperics, by Dr. Cotton.

Dr. Cotton: I have not prepared any report for this committee. I think practically all the members have a knowledge of what has been accomplished by the last Legislature. I can say that we have succeeded in passing the best veterinary practice act of any State in the Union. I do not know of any one part of that act which I would like to see rescinded. Of course there are some clauses that had to be introduced applying only temporarily, which were, perhaps, undesirable, but you will remember that at the State meeting last winter we explained the reason why we undertook to get any legislation whatever. It was the understanding that we would not undertake to change our practice act, but Dr. Reynolds was notified by a certain attorney in St. Paul that he was going to introduce a bill which was in favor of one individual quack; in order to register him, it would mean we would have to let down the bars and register all the quacks who failed to qualify under the old law. It was concluded that we would either have to fight that or get a new bill. Immediately four or five other representatives got busy who had constituents they wanted to register. You can imagine what the result was. We were met with numerous bills and we were in hot water continually. Finally, we saw that the only thing to do was to "get together" and make a few trades, which we did. These trades resulted in the registration, as I understand, of two men who were, as they claimed by affidavits, eligible under the law of 1893, but had failed to do so on account of sickness, and, I understand, will also allow the registration of another man, who has spent one year at Toronto. That, I think, was perhaps the best concession we could make, because we have at last got a practice act we can be proud of. But I want to sound a note of warning, if we have to do this every session of the Legislature. *i. e.*, make a concession to three or four unqualified practitioners, we might as well have no law at all. We will have to watch this very closely at each session, and try to keep the law and not interfere with it, and it will keep us busy preventing people from starting laws for certain individuals. I think we were justified in doing what we did, and hope the association will look at it in the same light.

As chairman of the committee, I was there a good deal, not as much, perhaps, as I should have been, but we could not communicate with every member of this association. When we acted we had to act quickly. I think this association owes Dr. Reynolds a vote of thanks. He certainly was faithful. There was not a day went past that he was not either calling somebody over the phone or patting them on the back, and we owe him a vote of thanks for the work he did in this matter.

Dr. Amos: You have heard the report of the committee. Are there any remarks?

Dr. J. N. Gould: While I live a long way from the cities, I keep in touch with the work through Dr. Reynolds and other members of the committee, and I feel that the committee should have some encouragement concerning this. Our talk is all right, and if the association sees fit we ought to have something on the books commending the work of the committee. I think, personally, on the whole, it was good, and is something that we, of course, were hoping for in the future. As I remember the first bill we had was rather a lame affair, and it was the result of a considerable amount of hard work on the part of the committee who had charge of it. A little later on we had something a little better, and each time we lost ground in allowing men in that were not desirable, but we gained ground all the time. I think the last step taken is a decided gain. I believe if we all feel right about it and work together we can keep it closed. If we work together for the next four or five Legislatures, after that time we will have little trouble, as the profession will be strong enough in the State to tide us over anything of that kind. I think, for the very efficient work done, we ought to offer a vote of thanks, and I move that we extend a vote of thanks to the Legislative Committee for the good work done, and particularly to Dr. Reynolds.

Dr. Leech: Coming as this does from one who was opposed to opening up that bill, I myself having urged it, and being rather jubilant over the results, I want to second that motion.

Upon a vote being taken, the motion was unanimously carried.

Dr. Amos: Any other remarks?

Dr. Reynolds: I want to say, gentlemen, that I have had the best pay and the greatest satisfaction this afternoon here that I have ever had in my life for anything I have ever attempted to do for my profession. I appreciate this more than I can tell.

While I am on my feet I want to make a couple of suggestions as a result of our experience last winter, and I think it will prove encouraging to you in matter of our political power. To illustrate the point, they opened one amendment and that was given in the letter sent out by Senator S. We could not compromise on any sort of a basis. We told him so, courteously, and tried to explain that he did not understand what he proposed, and tried to show him what it would result in, but he would not listen to reason. Dr. Ward was with us. He said, "then perhaps you are going to oppose my amendment?" He said, "Well, I suppose it is fight, and we will have to fight." We said nothing, but sent out a circular letter and a storm came in on the Legislature so suddenly and so vigorously from all over the State, that in about three days he concluded that he did not want to fight, and permitted me to write an amendment and word it exactly as I pleased, as a substitute for his. That was the third proviso of section 5 of the new bill. When it goes that way, when you all act together promptly, we have more influence than we ever supposed; more than I had supposed.

There was one other point. I want to urge that members of this association take a reasonably active part in your local politics. There was one Senator who was pulled two ways. He had a graduate member of this association, one of our old standbys, who was faithfully favoring our bill and favoring our amendments. He had a non-graduate in another portion of his county who wanted the amendment, and wanted him to oppose our bill. The non-graduate was an active man in politics and the Senator was a little bit afraid, and we failed to get that man's support, although the bill was approved by the graduate and opposed by the non-graduate. The non-graduate took a rather active part in his local politics. The graduate did not. There is quite a moral in that suggestion.

Dr. J. N. Gould: I think Dr. Reynolds has quite a point there. There is no question about it. I know perhaps every member of the association in general practice knows that in a general way you have to handle some men, you might say, with gloves. If he stirs them up too much and gets into disfavor he does harm. It is so, a man who takes lots of interest may do harm, but another man, who does not take an active part will not do any harm. I do not believe that the veterinarians realize the power they can be if they take an active interest, to show the members of the Legislature that they do take an active interest. If a man

shows his senator or representative what part he is taking along the line of veterinary legislation, and shows him that it is going to do thus and so, the senator will pay a lot of attention to him, because he is sure of stirring up a hornet's nest. I realize that the man who sits back and does not say anything, does not have much influence with the senator. The senator knows he can smooth it over with him and not cause any trouble. The members of the Legislature are pretty shrewd in figuring that out. It is not always a man's ability as a veterinarian or his good standing that leads to political power or political influence. It is the activity that he puts into the political situation of that town.

Dr. Cotton: I cannot agree with some of the statements made by the two former speakers. I agree with Dr. Reynolds that we should take an interest in politics. I do not believe, however, that a professional man has a right to mix in politics. He must necessarily take one side or the other and is bound to make political enemies, and I say a professional man wants to keep out of politics. He can take an interest, but to become an active fighter in politics is poor advice to give our fellow members. I think it militates against professional success.

Dr. Gould: I think, perhaps, Dr. Cotton thinks that Dr. Reynolds or I meant to leave our professional work. I did not mean to stir up a lot of strife, but a man can take an interest in politics and be on one side or the other, and take a good liberal interest in it. I do not believe a man is worth much unless he takes one side of the fence or the other. Every man on the opposite side is respected.

Dr. Cotton: I think, perhaps, I misunderstood these men. I say that we all ought to take an interest in the welfare of our community and an interest in politics to a certain extent, but for a man to get so interested in politics that he is necessarily going to neglect his professional duties is not right. You can look at the history of our medical men in the cities, especially those who have gone into politics. It has eventually hurt their practice. This is history. Do not misunderstand me, that I say a man ought to sit on the fence and not be on either side, but do not advise the young veterinarian to go into politics for political power and gain, for it hurts him from a professional point and financially. I think history will bear me out.

Dr. Leech: I think Dr. Cotton is right on that question. I would not advocate the veterinarian to go into politics. If you are going to be in the profession keep out of politics. It is my

advice to a young or an old man, but I want to say to you that there are more ways than one in stepping out into the open field, and no man can fail to have an influence with men who are in position to have political influence, and you can use their influence with those men. That is the main thing in politics. Stand in the right place and you will get out successfully.

Dr. Amos: A motion was made of extending a vote of thanks and I take pleasure in extending that vote of thanks to that committee at the present time, and particularly to Dr. Reynolds.

The next is the bacteriological report, by Dr. Beebe.

Dr. Beebe: I think the most rapid stride made in bacteriology in the past few years is along the line of serum therapy and vaccination. At the present time we know the cause of a large number of infectious diseases, but do not know the treatment. We have several vaccines we use, and a great many diseases that we can give serum treatment. In the past two or three years an Englishman by the name of Wright has been working along a line that may be beneficial to the veterinarian in a few years, although not perfected enough yet to be applicable. This is known as apsonin treatment. It is used for the treatment of a large number of infectious diseases of man, particularly those of chronic nature. For instance, they have used it in the treatment of chronic abscesses, and perhaps in a few years we will be able to use it in the treatment of a fistulous withers, etc. This treatment is merely a vaccine. The way they get vaccines is to take cultures from abscesses or whatever it may be in pure cultures. Draw some of the blood from the subject which they intend to produce the vaccine for and take the leucocytes out of the blood and take some of the organisms and mix with leucocytes. The leucocytes will take up a certain number of bacteria, and then the leucocytes are put on a slide and stained. The number of bacteria that each leucocyte shows is counted. The vaccine is then prepared from the culture by taking a small amount and heating it and injecting it into the diseased person. In about a week or ten days make a second count of the number of bacteria that the leucocytes will take up and they find the number increases by using this vaccine, and regulate further treatment by this count as an index. They have treated several of the chronic diseases in this way. The chances are that in a few years we may be able to use it in veterinary work. At present it is too complicated to be practical.

Recently an article appeared in the *Journal of Comparative Pathology and Therapeutics* on the form of chronic diarrhoea in cattle. There has been found on the mucosa of intestines, by several men, a large number of organisms that resemble tubercle bacillus, and the men who have worked on this disease are men of very good reputation. Although this organism has particular pathogenesis for small animals, such as guinea pigs, rabbits, etc., they seem to think it is the cause of this disease. I do not know that this disease has ever been found in this country, but it seems to be prevalent in Europe.

There is also some work done along the line of glutination in glanders. Drs. Moore and Butler are doing more work, although Parke-Davis & Co. have recently published in the *VETERINARY REVIEW* the method of technique in which the veterinary practitioner may apply this test. I do not know how it will work when put to a practical test. There is a good deal of work being done along the line of bovo-vaccination, but nothing new any more than has appeared in the *VETERINARY REVIEW*, and I think nearly every one here has that journal.

I do not know that there is anything else along the line of bacteriology. Of course there are new articles coming out all the time, but many of them are not of practical advantage to the practitioner.

Dr. Amos: You have heard the report. Are there any remarks?

Dr. Anderson: I would like to ask Dr. Beebe what success he is having in tetanus vaccinations. I have lost several horses during the past six months with tetanus.

Dr. Beebe: I think the best results have been obtained by tetanic serum as a preventive measure and not as a therapeutic agent, because the tetanus toxin, after being eliminated from the organism, very quickly unites with the central nervous matter, and as soon as that union has taken place the antitoxin is of no use. If used early in the diseases, you will get good results, but if used later this toxin is united with nervous matter. The theory is that tetanus toxin united with the central nervous matter as a key fits a lock. Good results can be obtained very early in the disease, or before symptoms have developed. In human practice they use it quite a great deal in suspicious wounds. If a child has a bad nail wound they administer the antitoxin, and in that case they usually can prevent the disease, but after symptoms are once manifested it is of no great benefit.

Dr. Amos: If there are no other remarks, we will proceed to the report of the Committee on the Revision of the By-laws. If I remember rightly, I think that committee consisted of Drs. Reynolds, Leech and Mack.

Dr. Reynolds: I had forgotten, if I knew, until coming down on the train that I was connected with such a committee, and I have had no opportunity to confer with Dr. Leech, but Dr. Mack and myself, on the train, looked over the constitution and by-laws, and indicated in the rough quite a number of changes that we thought desirable. Now, I would ask, on behalf of the committee, that we merely report progress and be given a little time, and we will report later.

Dr. Amos: The Committee on Revision of the By-laws has reported progress, and request further time to report later. Further time will be granted.

Dr. Amos then called on the following committees to report: Committee on Medicine, Committee on Press Reports, but reports were not made, as the members were absent.

Dr. Amos: The next committee is the Committee on Resolutions, Drs. Leech, R. R. Donaldson and Leffingwell.

Dr. Leech: The Committee on Resolutions has more work, judging from what I have heard read. The other two members are not here, and I would suggest that the chair name a sufficient number to make it out, and we will report later.

Dr. Amos: I will name as assistants to fill out the committee Dr. J. N. Gould and Dr. Cotton. The Committee on Resolutions will report later.

Dr. Amos: The next on the programme is the application for membership. Are there any applications?

Dr. Mack: I have four applications, as follows:

D. J. Holton, Waseca; vouchers, Dr. E. Mackey and M. S. Whitcomb.

A. O. Rustad, Fergus Falls; vouchers, C. A. Mack and D. M. McDonald.

B. Porter, Albert Lea; vouchers, M. S. Whitcomb and W. L. Beebe.

C. J. Sigmond, Pipestone; vouchers, J. P. Foster and G. McGillivray.

After some discussion, the above applicants were separately elected to membership.

The new members were then brought in.

Dr. Amos: On behalf of the Veterinary Association, we welcome you as members of this association.

Dr. Holton: I am very glad to be with you to-day, and I will do all in my power for the veterinary profession, and I appreciate your kindness.

Dr. Porter: I am sure that it affords me a great deal of pleasure to be here to-day and meet so many of the old boys I used to know some years ago, and shake their hand, and also to be admitted to this Minnesota Veterinary Association. I am sure that in my weak way I have tried to do all I could. In different parts of the State I find boys that I have been through school with, and am glad to meet with, and I always want to be professional in everything I do. After a long time, all alone, rubbing up against the quack element, nothing to help you, and nothing to stimulate you, and I have been conscious of that one saying, that it is hard for man to live alone, and I am glad to join with you and give you my hearty support.

Dr. Sigmond: I thank you all very kindly for what you have done for me by electing me as a member of this association. I will try to do what I can to advance the veterinary profession. A great many know I have been a veterinarian for some time and it is mostly a fault of my own that I did not join this association before.

Dr. Amos: We are glad to hear from the new members as to their willingness to help the veterinary profession, and in the near future we will give them an opportunity of helping by advancing papers, helping in the clinic, etc.

We will now proceed to new business.

Dr. Reynolds: I have a few ideas that I want to unload. The first is with reference to the State Agricultural Society. I have satisfied myself that this association is entitled to membership in the State Agricultural Society. I have reason to believe that if this association sends properly certified members to the State Agricultural Society that they would be seated, their credentials accepted and recognized as members of the State Agricultural Society for that meeting. That is the society that has control of our State fair, and it would be a creditable thing to have a say in such an important thing as that society. The membership consists of representatives from the State Live Stock Horse-breeders' Association, the Swine-breeders' Association, the Sheep-breeders' Association and the Bee-keepers' Association. I find, on looking the matter up, that the wording of the law is

to the effect that prominent societies that are actively identified with agricultural or directly connected with agriculture are entitled. Certainly we are that. I move that this association should send two properly certified members and ask that they be seated at this meeting in next January. I think the number should be two.

Dr. Anderson: I second the motion.

Carried.

Dr. Reynolds: I want to represent the Stallion Registration Board here for a few minutes, and give you some suggestions concerning this work, and I know of no place where this should come in. These are some suggestions that we wish that men doing this work might follow rather carefully. Be careful to give horse company's or horse owner's name, particularly horse companies that are known or recognized as legal. Do not report a horse as belonging to some company that your postmaster never heard of. Be sure to have the veterinarian's certificate acknowledged. The first veterinarians' certificates that came in were very few, and we made a mistake in not having a blank at the bottom of that, but a letter was sent out. Be sure and have it acknowledged. Be sure and give correct addresses. In some cases incorrect addresses have been sent in of stallion owners as for one town when they get their mail at some other place. Report all horses examined, whether sound or not and leave the board to decide. If you are called to examine a horse, unless some business reason to the contrary, but the thing the board wishes is that all horses examined should be reported. We have had some cases where veterinarians have refused to examine because they would have to report unfavorably.

It is the intention of the Stallion Board to be very lenient this first year in not making any attempt in shutting down hard and fast. This must be a matter of gradual development. To enforce the law as written would destroy thousands of dollars of property and would cause an amount of enmity against the work which would ruin it and cause the repeal of the law. All stallions applying have been given temporary certificates for sixty days. Quite a number of others and certain classes have been held up until the next meeting of this board, and there are two points I would like to discuss and to know what you think and advise. One is the matter of roarers, true roarers, laryngeal paralysis, and the other is side bones. There are a number of draught horses so reported.

Report all cases if you can and report just what you find, because you might be put in a very unfair situation if you sent in a veterinary certificate and leaving the inference that it is sound, and some other veterinarian in the future reports something you did not think worth reporting. We have not yet come to that point yet, and I am making a suggestion before we get to it. We are especially anxious to get a list of sound horses in the State.

Keep together all papers that you send in and state definitely whose horses the fees cover. Also show just where the pedigrees belong.

I would also like to report to the association that we have another renewal of the appropriation of \$5,000, secured by Congressman Davis, in connection with the research work in connection with the Experiment Station, Sanitary Board and the Government. That is to be continued for another year, using it in connection with swamp fever.

Dr. Cotton: I had a talk with Dr. Reynolds in regard to the veterinarian's position as to stallion's soundness. As it stands now I question whether I want to examine any horse for soundness. An animal is brought to a veterinarian to examine and report to this board. He examines it and finds some little thing, and it is a question in his own mind as to the soundness. For instance, we have an animal that has a curb. The law reads that a curb on a curby leg is considered sufficient to refuse a license. One veterinarian might consider it a curb on that limb and another one would not. We send that certificate in for examination and it is up to this board whether they will issue license or not.

In the license they issue, provided they give one, they state that this animal is sound and so reported by such veterinarian, when the veterinarian did not report it so.

It is very rarely that we can absolutely state that a horse is sound. It is up to the board. The license does not enumerate the conditions which he reports, and it is unfair to the veterinarian.

Dr. Anderson: I agree with Dr. Cotton most emphatically.

Dr. Nickerson: The law reads: A horse shall not be examined for four years, and if passed sound now, he will have a pretty good show hereafter.

Dr. Leech: I intended to talk with Dr. Reynolds, but as the question has come up, I will ask, Is not the American Veterin

arian Association recognized by the Bureau of Agriculture in Washington, D. C.?

Dr. Reynolds: Yes.

Dr. Leech: Then I would like to know the reasons for turning down a horse duly raised, duly numbered and duly recorded, and sending him back a license as a grade horse and not eligible to register, when registered at Washington, D. C.

Dr. Reynolds: Is that horse registered as a standard horse?

Dr. Leech: Yes; registered as a standard horse. When I examined this horse I notified the board that this certificate was burned or lost. There is no question should not be registered, unless the board is not satisfied as to whether this is the horse or not.

Dr. Reynolds: No permanent certificates have been issued so far where there was serious question, where there was anything seriously wrong with the horse. Doubtful cases have been held for permanent certificate, and I would propose to protect the veterinarian in the future, so that it shall read, "Serviceable, sound or breeding sound, or practically sound," or something to that effect, so it will not appear that the veterinarian has passed the horse as absolutely sound.

In reply to the question, if the board be rather lenient during the first year or so, and the stallion only examined every four years, and is owned by this old owner, that gives that horse a long term of service. That is true, but that is a rare thing and may happen in a few instances, and we cannot possibly provide for those exceptional cases.

Dr. Leech raised the point concerning the standard bred horse registered by the American Trotting Registration Society, and asked whether that association was recognized, and I said "yes." He then asked why was not a certain stallion given a certificate as a pure bred horse. The owner was sent back a grade certificate. The owner did not send into the board the certificate of registration from the American Trotting Registration Association. The board has so far been asking owners of all pure bred stallions to send in their certificates of registration, as positive proof of registration, and in the office those certificates are compared with the stud books of the various breeds, hunting up the description of the horse, the age, color, markings, because there is a great deal of fraud in dealing with stallions. A great many horses are posing under false pedigrees, and the board is doing the best it can to weed these all out, and I have

been insisting so far on having a certificate of registration from the examining board. It is very possible in this case, if the owner has a horse that is registered in the books of the American Trotting Registration Association, but has lost his certificate, or for any reason is unable to get any, it would still be possible to prove the indentity of the horse. Now, I have not charge of that piece of the work, but I have merely charge of the veterinary work. I am not responsible for that at all.

It was moved that this discussion on Stallion Registration Board be closed.

Dr. Cotton: Speaking of question of soundness, I would personally think that the statement of sound from a breeding standard would be more satisfactory.

Dr. Amos: We have a motion that this discussion be closed.

The motion was seconded and carried

Dr. Amos: Any further new business?

Dr. Reynolds: I have something else. In looking over the constitution and by-laws, I see that my name was omitted. If I was not one of the charter members of this association, I would like to know who was.

Dr. Annand: I was there and Dr. Reynolds was there.

Dr. Amos: I know Dr. Reynolds was a member of that original first State Veterinary Medical Association when organized. It ought to appear on the minutes, and I would suggest, if not on the minutes of the first meeting, that it be added by the Secretary. It is pretty hard to change it on the present by-laws and constitution.

This concludes the afternoon session. It is now 5.20, and we have plenty of time, and I would make a suggestion that we proceed and call on Dr. Reynolds for his report on the Examining Board.

Dr. Reynolds: I wish to bring up the point that there is no provision in the law for the Examining Board to report its financial matters to anything or anybody, although it is a State board. Most boards by law report to the State Auditor, or State Treasurer or Governor annually, semi-annually, but there is nothing in our law concerning the financial matters of the Board of Examiners, as to whom or what they shall report, and it has never been customary for the board to make a report to anybody for anything or anybody. The thought occurred to me that that was not good business, and I made a motion that it be the established custom of the board that hereafter, at certain

intervals of not less frequently than annually, it shall report to this association, giving in full its financial statement, a statement concerning the candidates passed, refused, changes in the law and rulings from the Attorney General's office, so that this association might know thoroughly concerning the work of the Examining Board.

Dr. Reynolds then presented his report.

Secretary's Report for the Semi-Annual Period Ending July 9, 1907.

To the State Association:

I take pleasure in reporting that since our last meeting the Legislature has passed a new practice act, revising quite materially the old one. The following are the important features:

Terms of membership, five years, instead of two.

One appointment to the Examining Board each year, instead of all members at the same time.

Date of examination is changed to the Tuesday preceding the second Wednesday of January and July.

In the matter of colleges whose graduates are eligible to examination the word "reputable" is inserted, giving the Board power of discretion.

All certificates are hereafter subject to annual renewal, provisions being made for renewal on or before the 1st of May of each year.

The bill passed much later than was expected, and there was not time to arrange for registration for 1907 before May 1st. We therefore acted on the spirit, rather than the exact letter of the law for the first year.

The board is given authority to revoke or refuse renewal for gross moral or other professional misconduct.

Certificates are now to be recorded in the county or counties where a man practices, instead of in the county where he resides. It is not necessary to record annual renewals.

Prosecution may now be either civil or criminal, and penalty either fine or imprisonment, and punishment may now be more severe.

It will be noticed that we have secured all of the features recommended in our last semi-annual report and something in addition.

I think we may now feel that Minnesota has as good a veterinary practice act as there is in this country, and that we are

on a good, safe financial footing for the future, the board being assured sufficient income to pay the necessary routine expenses and to provide for all probable expenses incurred in connection with prosecution suits.

Additional Rulings from the Attorney General's Office.

Since our last meeting, we have had several important rulings concerning the law from the Attorney General's office, of which rulings I will give brief summaries.

The question was raised as to whether the clause in the Code of 1905 which provided for the examination of candidates who could show five years' practice in another State (which has since been repealed) implied that the practice must have occurred in one State. Attorney General Young ruled, under date of October 10, 1906, that the important feature was five years of previous practice, and that the phrase could read, and should be construed, "in any other State," instead of "another State," *i. e.*, whether the practice occurred in one or several States was immaterial.

Concerning an application made under the five-year clause of the old law, mentioned in the previous paragraph, and which was received before chapter 419, Laws of 1907, went into effect, Assistant Attorney General Simpson ruled, under date of May 17, 1907, that such candidate would be entitled to examination, and certificate, if examination be satisfactory, the application having been made under a law then in force.

Concerning an application for examination under the third proviso, chapter 419, which expired in ten days after the passage of the act. An applicant was received a few days after the expiration, the applicant proving that the law had not been published in his local papers by the Secretary of State until several days after the expiration of this proviso, and that he made the application promptly after such publication. The Assistant Attorney General Simpson held as follows:

"That while perhaps strictly under the law, an applicant must be presumed to have had knowledge of the fact that such law was in existence, yet, if under all the circumstances, you are satisfied he acted in good faith, I should issue certificate to practice."

This may reasonably be taken to mean that the board *may* issue certificates under such circumstances, and that the board may have some discretion in such matters.

Since my last report, we have simplified somewhat our methods of filing correspondence and records, and of keeping records. We now use a series of two letter baskets and corresponding files, one for "pending," which includes applications, unfinished cases, and practically everything which is to come before the board at its next meeting.

A second, "current," receives current correspondence and "pending," after these are finished.

All cash received and cash paid shows in the check book, the board keeping check account with the First National Bank of Minneapolis. All bills, both large and small, are paid by check, and each check shows on the face the bill for which it is drawn.

We now have the veterinarians of the State card-indexed in three separate sets, each alphabetically arranged, one for the registered men, classified by towns; one for unregistered non-graduates, and another for unregistered graduates. The official list of registered veterinarians is kept by name, alphabetically arranged in an official book register.

At the January meeting of this board there were nine candidates, six graduates and three non-graduates. Four graduates were passed, two failed. Three non-graduates were under consideration. Of these two were held over and one up for examination failed.

It may be interesting to note the effect which the new stallion law has had upon our official registration list and upon annual renewals. A considerable number of unlisted certificates have been discovered under the working of the stallion law, and a number of tardy renewals came in promptly when the holders of certificates were notified by the Secretary of the Stallion Registration Board that their certificates were not in force by reason of failure to renew.

It is with pleasure that I am able to report that all graduate certificates have been renewed except three, which seem to have been lost as to address.

Fifty-one non-graduate certificates have not been renewed and, of course, are not in effect.

In closing this, which may be my last report as Secretary of the Minnesota State Veterinary Examining Board, I wish to thank the members of this association most heartily for their assistance and co-operation, and to urge a continued active interest and as close personal knowledge of the work of the board as possible on the part of each member of the Minnesota State

Veterinary Association. Numerous other duties in addition to my regular station and university work have made it necessary for me to be relieved from this and possibly other outside responsibilities. I hope that my resignation may yet be accepted.

M. H. REYNOLDS, *Secretary*.

NOTE.—According to our established custom, an itemized financial statement was printed as part of this report to the association. This was audited, verified by statement from the First National Bank of Minneapolis and signed as correct and approved by J. G. Annand, Chairman, Finance Committee of the State Association.

M. H. R.

Dr. Amos: You have heard the report of Dr. Reynolds. Dr. Reynolds is the first secretary that has ever given us a report of the State Examining Board. We have had State boards, and have asked them and insisted on having report, but could not get one. When the Secretary was asked for a report and brought up to the Governor of the State, the Secretary left the State. We have had a very comprehensive report from Dr. Reynolds. We can certainly congratulate ourselves on the financial condition of the Veterinary Board, a balance of \$600 or more.

Dr. Gould: I think, perhaps, some of the newer members do not realize the healthy condition of the Examining Board. I remember a few years ago when we took up a subscription from the members of this association to give the Secretary some money to use in prosecution work. Some of it was paid and some was not. This method of collecting a little money to aid this work was a great deal of a voluntary contribution. Some of the contributions dragged along and never were paid. This method of an annual fee is a very good way. I remember the first board we had, whatever money they collected there never was a report made of it and no one knows how many licenses were issued. Each succeeding board has done a little better, and this last board has certainly done a great deal better. The report looks very nice to me. It looks good and undoubtedly can still be improved upon, although this is very satisfactory.

Dr. Reynolds: As late as about three years ago, the average receipts for six months was \$43.46. The average expenditures were \$73, and the board was going in the hole about \$30 each meeting, twice a year. Some members came to the meeting and paid their own expenses.

Dr. Gold: The veterinary law has been getting a little bit better for the veterinarian, and this new stallion law that has

been put upon the statute books will be of more benefit as the years go by. To start with, it is probably not just what the veterinarian would like to have it. As years go by it will be what the veterinarian would like to have it. If we could do what we can to help the board each succeeding four years, or whatever the period may be, it ought to be a little bit better and be of more value to the veterinarian than it is perhaps now.

The meeting then adjourned until 7.30 p. m.

The meeting was called to order at 8 p. m.

Dr. Amos: There is a matter that has been brought to my attention, and we should have acted on this afternoon, which would have been the proper time, but there has been a little incident occurred since our last meeting that I think ought to be taken notice of by this association. What I refer to is the loss of one of our best members of the association, an active worker and one ready all the time to work. I refer to the head of our Sanitary Board, Dr. Ward. (Applause.) Dr. Ward has been with us for a long time, and he has been a mainstay you might say of this association, always ready to do his part. He has always been in position to give us some information, not only as executive officer of the Sanitary Board, but as a member of this association we have had a loss. But it is for his benefit, I think, and I would suggest that a motion should be made to place his name on the list of our honorary members of this association.

Another thing I would like to bring to this association is this, Dr. Ward ably filled the office, and it was a pretty hard office, as executive officer of the State Board, to fill. His successor is appointed, and he is a man I know will fill the office, but as a man he cannot fill the office, I do not care who he is, unless he gets the hearty support of every member in the association. The best thing we can do now—remember I am not coming here begging your support, for Dr. Whitcomb deserves that support, and will get it, and is able to fill the office, and had a drilling under Dr. Ward, and is fitted to follow in Dr. Ward's footsteps. There is an old saying, there are just as good fish in the sea as those that have been caught, and I only know that Dr. Whitcomb will fill this office, but at the same time we have, as individual members of the association, to give Dr. Whitcomb our support. If Dr. Whitcomb tried to do it alone, it would be like the organist who tried to give a great display, and he happened to be giving a fancy piece of music, and the pumper says: "Didn't

we give them grand music?" The musician said, "You; what did you do with it?" When he was giving his fancy music again the pumper happened to stop, and the organist looked up, and the pumper looked up and said, "We are doing it now."

It is we, and the organist is Dr. Whitcomb. I think it would be a good motion to make, both in regard to ourselves, as members of the association and as individual members, both in regard to Dr. Ward and his successor, Dr. Whitcomb, to bring it to the attention of our Committee on Resolutions, so that I think that the Committee on Resolutions can take it for granted, without putting it to a motion or taking any vote on it, for Dr. Whitcomb can rely on this association and the individual members of this association to stand at his back, and he can consider we are with him.

The first on the programme is a report by Dr. Gould.
Dr. Gould then read his paper.

INJURY OF THE SYNOVIAL BURSA OF THE FLEXOR BRACHII.

Case I.

Bay mare, four (4) years old, owned by Mr. Greenland, of Round Lake, Minnesota, June, 1896.

This animal had been stiff and lame for some months. A large tumor had developed on the arm below the point of the shoulder towards the outside. This enlargement had reached such dimensions that it covered nearly the whole region.

Diagnosis—

Abscess of same character, and advised the owner of a possible serious outcome.

Operation—

Surface carefully disinfected and a free incision made, followed by the escape of a large quantity of partly coagulated serum and synovial fluid.

Exploration—

Exploration revealed the presence of a rupture of the synovial sack of the flexor brachii along the outer border of the muscle. The cartilaginous surfaces were smooth and apparently healthy.

Treatment—

Irrigation with 1 per cent. solution of phenol.

Recovery—

Recovery was rapid and complete.

Case 2.

Brown mare, owned by Mr. Beckley, of Worthington, Minnesota. I first saw this case in the fall of 1906. A diagnosis of the shoulder lameness was made, and a mild liniment was prescribed, followed by improvement. Later I was called to see the patient. The animal had evidently injured the shoulder again, and was unable to use the leg to any extent. I again prescribed a liniment and later a blister was applied. A small swelling, quite hard, appeared below the point of the shoulder towards the outside. I did not see the animal again until the spring of 1907, although the owner had occasionally reported that the animal had not improved. When again presented for treatment the enlargement had grown so that it covered the entire region at the point of the shoulder. The owner was informed of the probable condition and a doubtful prognosis given.

Operation—

The operation the same as in Case 1, and on exploring the cavity a certain amount of roughness on the outer edge of the bursa, which was ruptured its entire length on the outside.

Treatment—

Formalin solution, 1-1000 injection, followed by rapid recovery. The animal having free use of the limb when walking. Shows some stiffness when moving at a trot.

Case 3.

Gray mare, eight (8) years old, owned by C. Morgan, of Round Lake, Minnesota.

This case was presented for treatment in the fall of 1906, and at that time a diagnosis of the shoulder lameness was made. The animal dragged the toe when walking and swung the leg out when advancing it.

Treatment—

Blistering was prescribed and an apparent recovery made under this treatment. The patient soon became lame again when put to work, and returned for treatment in a few weeks, and the same treatment prescribed as before. The patient was lost sight of until in the spring of 1907. She was returned for treatment in June, 1907. At this time a small swelling had appeared below the point of the shoulder towards the outside.

Diagnosis—

Rupture of the synovial bursa of the flexor brachii. The owner was advised of the possible stiffness remaining after the operation.

Operation—

Same as in Cases 1 and 2, revealed the presence of a small quantity of synovia in the surrounding tissue. Exploration revealed a rupture of synovial sack along its outer border and a roughness of the cartilaginous surfaces of the bone and muscle.

Treatment—

One per cent. solution of phenol irrigation at first, and later injections of ætherial solution of iodoform. The cartilages sloughed off and the muscles healed fast to the bone. At the present writing the animal is somewhat stiff, but able to walk home, a distance of eight miles.

J. N. GOULD.

Dr. Amos: You have heard the report of Dr. Gould's cases. Any remarks to make or questions to ask?

Dr. Cotton: How do you diagnose it as a rupture of the sheath?

Dr. Gould: For this reason, a peculiar swelling and a peculiar place, a place you would not have an abscess of any kind. The first case I did not recognize it, but it is distinctly a rupture.

Dr. Cotton: It is limited to a sac?

Dr. Gould: No; it is ruptured and the synovial escapes. Perhaps part of that is serum. There is no pus, so evidently it would be partly serum and synovial pus.

Dr. Cotton: It could not be an enlargement?

Dr. Gould: I do not think it possible, because the tissues are so dense. I do not think you will find an enlargement of that kind, but a rupture.

Dr. Cotton: Had nature formed an artificial wall?

Dr. Gould: No; the first case I saw I did not recognize it, until after I operated on it. The first one I opened there must have been perhaps one-half gallon. It was an immense thing. I saw the case when it was in that stage. It had been growing slowly some months at least.

Dr. Cotton: The last one you stated, the size of a fist, was the one you recognized?

Dr. Gould: Yes; and there was some sloughing of the cartilage before I saw it. It must have been from some severe injury on the point of the shoulder.

Dr. Whitcomb: I would like to ask what he thought was the cause of these ruptures. Whether it was a sprain or bruise?

Dr. Gould: I do not know how a bruise could do it or a sprain could do it.

Dr. Whitcomb: No peculiar work they were at?

Dr. Gould: No.

Dr. Annand: Was that second case the case of an animal that had been working?

Dr. Gould: It was a traffic mare and had been driving.

Dr. Amos: We have with us to-night Dr. Tomlinson, and he is to speak on a subject of interest to all of us, and I anticipate a treat from the paper we are to hear from Dr. Tomlinson.

Dr. Tomlinson: Tuberculosis and its pathology is always an interesting subject, and it is also one in which the physician and the veterinarian can meet on common ground. It so happens that during the past fifteen years I have had the opportunity to study human and bovine tuberculosis side by side, and the comparative study of the morbid anatomy of tuberculosis has been of great assistance to me in determining the significance of certain pathological conditions that were obscure when considered from the standpoint of the morbid anatomy and histology of human tuberculosis alone. Among the lower animals I have had the opportunity to study the incidence and pathology of tuberculosis in 120 cows, 2 oxen, 3 deer and one mule.

To begin with the mule; this animal and her mate were kept for some time in a dark basement stable under the barn floor upon which our cows were stabled. This floor was leaky, and there was an almost constant drip from the floor above, especially in the winter, when the cows were in the barn all day. About two years before this mule was killed she began to be lame in the off fore leg, on account of stiffness in the knee. Later the knee began to swell, and the swelling was doughy. Under vigorous local treatment this swelling partially disappeared, and the lameness was less, but, after a time, the animal became permanently stiffened, often stumbled, and frequently had to be helped up in the morning. The knee and leg became deformed, showing that there was marked involvement of the joint surfaces. About a year before the animal was killed, she grew very much emaciated; the paunch became markedly dependent, and the animal more feeble. After she was killed the lungs were found to be fibrous, the spleen atrophied and the pericardium nodular on its inner surface. The capsule of the liver was thickened and adherent, and the

liver substance was fibrous. The joint was disintegrated, and the capsule as well as the articular surfaces had undergone tuberculous degeneration.

Among the cows killed two had tuberculous joints. In both cases the hock joint was involved; as this joint is most likely to be strained in slipping, in getting up or sliding on a slippery surface. In both cases the tuberculous involvement of the joint was acute and very painful, although there was very little swelling. Post-mortem, typical involvement of the joint was found, with infiltration and fibrinous deposit in and about the joint. There was no evidence of gross tuberculous involvement in any other part of the animal's body.

The oxen had been kept for years in the stable under the cow barn before referred to. Both became very much emaciated some time before they were killed, but there was no cough, and they continued to eat well. In both cases chronic involvement of the pericardium, lungs, liver, spleen and kidneys was found. The involvement of the kidneys being most recent and acute. We have found, as a matter of fact, that cattle becoming emaciated during the course of tuberculous disease always show marked involvement of the parenchyma of the kidneys, with a large amount of fat in the pelvis.

The yard in which the deer were kept was below the yard of the cow barn, so that drainage from the cow barn was through this yard. The deer had been inbred for many years, so that their power of resistance had been much reduced; and besides, the yard was small, thus circumscribing their movements. The first evidence of disease among them was in a fawn that became rapidly emaciated and died. Post-mortem, there was found what used to be called *tabes mesenterica* in children. The mesenteric glands were involved and the intestinal wall was thickened. Finally, all of the deer, except two, died under practically similar conditions; only the older ones showed fibrous involvement of the lungs.

There have been two periods of involvement of our herd of cows. In 1894 we killed 65 cows, and in 1906 we killed 36 cows. Between these periods several were killed as the result of a clinical diagnosis of tuberculosis, or for other reasons, and the animals were found to be tuberculous. In the first lot of cows killed the disease was very much advanced in some of the animals, with cough and profuse discharge from the nose. At this time our herdsman, and a patient who helped him while testing the

cows, were infected, and both of them eventually died. Human and bovine bacilli were found in the sputa in both cases during the acute tuberculous process. As a rule, the cows that were Jersey or short horn crosses were more seriously affected, and showed the most acute and extreme changes. Besides the more nearly they were thoroughbred, the more rapid and extensive was the tuberculous involvement. One animal, a short horn cross, in splendid condition and a good milker, responded with a very high temperature; and post-mortem, a very large tuberculous abscess was found at the base of each lung posteriorly. These cavities did not contain true pus, but a mass of cheesy and oleaginous material. The second lot of cows, killed in 1906, had all been kept as calves, during the winter, in the old underground stable before referred to. These cows, with two or three exceptions, were Holstein crosses, fine animals, and in excellent physical condition. They had all been bred from cows free from tuberculosis, but, as stated, they had been exposed to infection during calfhood. However, all of those that were exposed did not become tuberculous. Among these animals the morbid anatomical changes were confined largely to the pleura and mediastinal glands, and the involvement was acute. The lungs in these cows were fibrous, and the older the animal the more marked the fibrosis. One cow had a large gland in the posterior mediastinum that was a cyst of pure oil. In a series of four of these cows the spleen and its capsule were markedly degenerated; the capsule being very much thickened and studded with tuberculous nodules, while the substance was fibrous and shrunken. The liver was commonly fatty in the younger animals, and almost all of the cows killed showed marked parenchymatous change in the kidneys.

In the first lot of cows killed there was one with tuberculous involvement of the udder, and as, at that time, the question of the source of tubercle bacilli in the milk was to the fore, we experimented with this animal. With all ordinary precautions tubercle bacilli were always found; but after thorough cleansing and the withdrawal of the milk with a sterilized tube, no tubercle bacilli were found. Our experience would lead us to believe that the presence of tubercle bacilli in the milk results from external contamination, and while we have had only this one opportunity to test the milk from a cow with a tuberculous udder, the negative evidence is good, so far as it goes. It is so easy to contaminate the udder externally, especially if there is nasal discharge,

and dust in the stable may accumulate in the crevices about the orifice in the teat. Besides the tuberculous deposit is in the structural tissue between the acini of the gland, and not in the glandular structure itself, so that the opportunity for the bacilli to get into the milk is not good, and by the time the glandular tissue breaks down the tubercle bacilli have disappeared.

With regard to the comparative pathology of tuberculosis, it is well known to you that among human beings the destructive changes in the lungs are the result of secondary infection with the pus forming bacteria, and that the chronic septicemia which results is the cause of the characteristic symptoms of destructive disease of the lungs. In cows I have never found this secondary infection, because we kill the animals before the disease has reached this stage; but I presume you have seen animals with secondary infection, and the characteristic abscess cavities. In our experience the lungs are fibrous, and the pleura thickened; the mediastinal and bronchial glands enlarged. The cervical and mesenteric glands are often involved, nor do we find tuberculous involvement of the intestinal wall. We have seen only one case of tuberculous pericarditis. In this animal there was no other evidence of tuberculous infection, but the pericardium was from one to two centimeters thick, and, with the heart, weighed 38 pounds. There was some involvement of the cusps of the aortic and mitral valves, and some endocardial thickening. The absence of secondary infection with the pyogenic bacteria probably accounts for the fact that tuberculous cows are seldom emaciated. We have always noted that in our patients who were markedly defective, and in our senile cases of fibroid phthisis; the external surface of the lung was peculiar. The pleura was not only thickened, but it dipped down between the lobules, outlining them in such a way as to give the surface the appearance of scale armor. When we made our post-mortem study of the lungs of tuberculous animals, we found this same condition, only more marked. We also found that this condition was uniform in tuberculous cows; it was only present in the defective and the senile among human beings. This correspondence suggests the probability that in human beings who are defective, and in those in whom senile changes are present, there is the tendency to revert to the biological characteristics of the lower type. It has been our experience that in the lower animals the tendency toward the degeneration of structural tissue is always more marked than the disposition toward destruction of functional tissue. It is for this

reason, we believe, that tuberculous disease runs such a different clinical course in human beings, than it does among the lower animals. There is further proof of this contention in the fact that the more defective the human being is mentally, the nearer is the resemblance in the clinical manifestations of tuberculous disease, and the greater the similarity in the post-mortem findings.

In our experience, the conditions that favor infection of cattle are the same as the conditions that favor the infection of human beings, that is, absence of light, want of fresh air and overcrowding. Again, there enters into this comparison another common factor. All human beings subjected to the conditions that are favorable to tuberculous infection do not develop the disease, and the same is true in the lower animals. Among human beings, while a bad environment increases the susceptibility, the predisposition must be there, and the same holds true in cattle. In our experience, inbreeding, and breeding for a particular characteristic, are the dominant factors in establishing this predisposition in animals; and this is illustrated by the fact that in spite of the utmost care and the best environment, the high-bred herds are decimated by tuberculosis. The short horn milk strain and the Jersey seem to be most susceptible in the order named. The long continued breeding for a special purpose, and one that is so extreme in its demands upon the general organism as is lactation, seems to have lowered the powers of resistance in these particular breeds in this country.

The avenues and mode of infection with tuberculosis are still the subjects of discussion and difference of opinion, but among animals in the barn, infection must take place in one of two ways, and probably in both. That is, by contamination of food, or by inhalation. From the fact, reported to me by Dr. S. H. Ward, Secretary of the State Live Stock Sanitary Board, that glandular infection is most common in cattle, it would seem to be immaterial how the infection was introduced, except that it is possible that when the food is contaminated infection is more likely to occur in the mesenteric glands, while from inhalation infection of the cervical, bronchial and mediastinal glands would be more likely. On the contrary, the insane who are tuberculous almost always swallow the sputa, and yet very seldom suffer from involvement of the mesenteric glands. It would seem that, as even the same herd, subject to the same conditions, shows so much variation in the location of the disease in different individuals, without regard to the avenue of infection, the disease

will attack that part of the organism that is weakest, and congenitally least resistant. It is our experience that this is true for human beings, and I believe it is also true for the lower animals.

Dr. Annand: In regard to your milk infection. Did you experiment with it in feeding it to other animals in which you could not find any disease?

Dr. Tomlinson: We introduced the milk into the peritoneal cavity of the guinea pig.

Dr. Annand: We very often have pigs fed from cows that are tuberculous that develop tuberculosis.

Dr. Tomlinson: We have frequently found infection of hogs, with the cervical glands involved.

Dr. Cotton: I want to agree with Dr. Annand, and assure Dr. Tomlinson we do get a double infection in cattle, and it is not an uncommon thing to find immense abscesses as well as the tissue degeneration. I would like to ask Dr. Tomlinson if he knows the source of infection of this mule. If he made cultures and was satisfied that this was tuberculosis?

Dr. Tomlinson: This animal hauled the slops to the hogs, and was kept in the same stable for years as the oxen, so that she was in contact with the source of infection.

Dr. Cotton: What was the source?

Dr. Annand: An injury?

Dr. Tomlinson: It may have been an injury. We found the typical tuberculous lesions.

Dr. Cotton: I want to question the diagnosis the diagnosis in the knee joint of that mule.

Dr. Tomlinson: The guinea pigs injected with the fluid from the joint died from tuberculosis.

Dr. Reynolds: I am sure we all appreciate the courtesy that Dr. Tomlinson has given us, and given us this little talk on comparative pathology and therapeutics, and I am going to move that a vote of appreciation be extended for this courtesy. I have reason to think that Dr. Tomlinson has a great deal of respect for the veterinary profession, in that he told me at the table this evening that he has it in his mind—he is now President of the Minnesota Medical Association—to establish a sort of section in that society. The same proposition is under way in the A. M. A., and he wants it in Minnesota, and that shows a good deal of appreciation and kindly feeling toward our profession. Dr. Tomlinson has shown himself thoroughly acquainted with the pathology and subjects in which we are interested. I fear there are a great

many veterinarians, myself included, that do not know as much about pathology of tuberculosis as Dr. Tomlinson. I move a vote of thanks and appreciation to Dr. Tomlinson.

Dr. Dell: I am sure I listened to it with a great deal of appreciation, and if I had been looking around for a talk on tuberculosis, I do not believe it would have occurred to me to go to St. Peter to find a man. I second Dr. Reynold's motion.

The motion was unanimously carried by a rising vote.

Dr. Tomlinson: I have enjoyed being here just as much as you have in having me here. I appreciate the opportunity of learning what I can from you.

Dr. Amos: We will proceed to the next paper, by Dr. Dodge, of Northwood.

Dr. Dodge was not present, but the following paper from Dr. Dodge was read by Dr. Mack:

"My object in giving this short description is to show that important symptoms sometimes vary or are entirely absent in certain conditions.

"The older men, no doubt, have had such experiences as I have had in this case, but those who are forced, because of lack of experience, to rely on the text-book for their symptoms, may find something in this that will be of use to them some day.

"Sorrel gelding, five years old, was brought to me the latter part of July. There was slight muco-purulent discharge from right nostril and the sub-maxillary glands slightly swollen. Horse ate well and appeared to feel normal, but when put to the trot there was a decided roar, the vibrations of which could be plainly seen and felt over the region of the larynx. The owner said horse had not been well for several months. Had taken him to another veterinarian, who told him the trouble was nothing but the distemper, and that he would come out all right.

"My first conclusion, after a careful examination of the oral and throat cavities with the aid of a speculum, was a laryngeal polypi. I could not say positively that such was the case, so owner did not care to risk an operation without first trying something else. I prescribed a blister for throat and an electuary containing potassium chlorate and the tincture of chlor. of iron. Saw horse three or four weeks later. He was much distressed and had considerable trouble in swallowing. I inserted a trachea tube, after which he appeared much relieved and began eating grass, but swallowed with difficulty. Directed owner to test him

every day for a week or so by placing hand over the tube, and if he got no better to bring him to my stable.

"In about a week he brought the horse to me. I decided to make an exploratory incision into the larynx, which I did on the median line, as for roaring, but found nothing whatever. I could pass a stomach tube easily up each nostril and out my opening, or pass it through the opening and out either nostril. Allowed wound to heal, which it did readily.

"I now directed my attention to the guttural pouch, although I had nothing but the discharge to indicate such a condition and that was far from what one would expect. I could not by any manipulating increase the discharge, nor would it flow faster when horse lowered his head to drink, which he would do readily. There was no swelling over the pauches or in the parotid region. As the discharge was from the right nostril, I opened the right guttural pouch through Vihorg's triangle and was rewarded by finding nothing. This operation I repeated a few days later on the left pouch in the same manner, and removed about a pint and a half of pus and a small cartilaginous mass, about the shape of a hen's egg and about half that size. Placed a strong rubber drainage tube into pouch and flushed it once a day with a creolin solution, and once in a while with a weak hydrochloric acid solution. When the discharge had nearly stopped, I sent horse home. He afterward lost the tube while in the pasture and made a good recovery."

Dr. Amos: We cannot expect Dr. Mack to defend Dr. Dodge's paper, and if there are no remarks, we will refer back to the report of the Committee on Resolutions.

Dr. Leech: The committee is ready to report, and I will ask Dr. Cotton to read it.

Dr. Cotton then read the following resolutions:

Whereas, The Allwise Creator, in His wisdom, has removed from our ranks our esteemed and venerable charter member, Dr. B. Lambrechts, of Granite Falls; be it

Resolved, That we hereby express our deepest regret and sorrow at the loss of so valuable a member of our society; and further, be it

Resolved, That a copy of this resolution be sent to his immediate family and also spread upon the records of this association.

G. ED. LEECH,

J. N. GOULD,

C. E. COTTON,

Committee.

Whereas, This association has sustained a great loss in the retirement of Dr. S. H. Ward from the ranks of the profession of this State; be it

Resolved, That we hereby express our deep regret at the loss of so valuable member, and also express our high appreciation of the work done by Dr. Ward as executive officer of the State Live Stock Sanitary Board, and while it is our loss we hope and predict for him the same or greater success in his new field of labor.

And Whereas, We deeply regret the loss of our Dr. Ward, we wish to congratulate the profession and the Sanitary Board upon the selection of so valuable a member of our association as Dr. M. S. Whitcomb to fill the position; be it

Resolved, That we recommend that each and every member of the association shall do everything in his power to aid and support Dr. Whitcomb in fulfilling the duties of his office.

G. ED. LEECH,

Chairman.

J. N. GOULD,

C. E. COTTON.

It was then moved and seconded that the resolutions be adopted. The motion was carried.

Dr. Cotton: Perhaps some of the members would like to know the results of the last clinic.

Dr. Amos: That would be very interesting, and the clinic was held at Dr. Cotton's infirmary, so we will hear Dr. Cotton's report.

Dr. Cotton: As regards the two smaller animals, the one in which we had placed a marble in the intestinal tract made a nice recovery, and we afterward performed ovariectomy and gave her to a farmer. The ovariectomy performed by Dr. Neumann also made a nice recovery.

You will, perhaps, remember the case for diagnosis where the median neurectomy was performed. You will remember that we felt we were justified in performing the median neurectomy, and the animal was lame for about one-half hour after it was cocained, but perhaps the stimulation of the cocaine overcame the lameness. You will remember that when they first took the animal out after cocaining the median, he went lame and then afterward practically sound, but the results of the operation were anything but satisfactory. I do not remember that there was any other operations, except on the animal we destroyed.

Dr. Amos: I think it would be well to call on the Revision Committee for their report at the next meeting in St. Paul, so that we will have it understood that we will call for the revision of the by-laws at the annual meeting.

Dr. Reynolds: That matter of attempting to secure recognition from our Agricultural Society. The motion was passed to send representatives with the request for admission and recognition, but I do not remember that it was settled as to how those representatives were to be selected, whether appointed by the chair or elected by the association.

Dr. Amos: What manner of procedure would you advise about appointing a committee.

Dr. Reynolds: The simplest way would be for the chair to appoint a few delegates. All other associations are represented by two delegates.

Dr. Woods: I understand that the county fairs have two delegates and the other societies have two also.

Dr. Reynolds: They are to be from some organization identified with agriculture in an active way. Surely we are, if the beekeepers are. I move that the President appoint two delegates and the Secretary be instructed to furnish them with proper credentials.

The motion was seconded and carried.

Dr. Reynolds: I would like to have the official approval of this association, particularly in regard to the report of the Examining Board. My idea is that that report should be made to this association and approved by this association, and practically audited by the Finance Committee of this association.

Dr. Leech: I think this society has really furnished funds, which are in the hands of the Examining Board, and the State has made no contribution to that fund at all, and it remains for those who have furnished that fund to know somewhat of the disposition of it, and I know no other source better than this to bring that matter for report, and that our Secretary shall issue an acknowledgment of that report, and practically audit that report by receipt to the Examining Board. I make a motion that the report shall be received and audited by the Secretary or some one appointed, and a receipt made back to the Secretary of the Examining Board.

Dr. Amos: I would like to see that accepted by the whole association, but we do not meet again in session and there is no one who can report, as it has not been examined.

Dr. Reynolds: I suggest this as a substitute, that the report of the Examining Board be accepted by this association, subject to inspection by the Secretary.

Dr. Cotton: The Secretary is a member of the Examining Board.

Dr. Reynolds: Then subject to the approval of the Chairman of the Finance Committee.

The motion was seconded and carried.

Dr. Annand: I wish to bring up one thing. Always at our annual meeting, when we have election of officers, especially President, at the adjourned meeting of the evenings, the old President steps out and the new President steps in. It is customary at our American Association that the President who was in the chair at the beginning of the meeting presides until the meeting is over with, as he is entirely familiar with everything. I think it would be well to adopt that plan, instead of the plan we have always had. I think it would be more harmonious.

I make a motion that at our annual meeting the old President retain the chair until the end of the meeting, and the newly-elected President shall be installed previous to the adjournment of the meeting, but not preside at that meeting.

The motion was seconded and carried.

The meeting was then adjourned.

C. A. MACK, *Secretary.*

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order by the President, Dr. F. H. Barr, Pana, at Springfield, July 10, 1907.

In the absence of Dr. Hayward, Dr. L. A. Merillat was appointed to act on the Board of Censors during the meeting.

The minutes of the last meeting were read and approved.

The following applications were read and each elected to membership:

J. M. Wright, D. V. S. (C. V. C., '89).

Earl R. Swim, M. D. V. (McKillip, '05).

H. M. Schultz, M. D. V. (McKillip, '04).

O. M. Winters, V. S. (Ont., '04).

G. A. Barnes, M. V. D. (McKillip, '06).

J. O. R. Campbell, M. D. C. (C. V. C., '07)

G. W. Wolaver, Jr., M. D. C. (C. V. C., '05).

John L. Lyle, M. D. C. (C. V. C., '04).

M. L. Hynes, M. D. C. (C. V. C., '06).

Reading and discussion of papers, Dr. C. S. Hayward, Mattoon, Ill., "Urticaria." This paper brought out a very interesting discussion upon the different types of skin diseases and treatments.

Dr. A. H. Baker gave a lengthy description of the pathological differences of the most prevalent skin diseases, which was appreciated by all present.

Discussion was closed after most all the members present had taken part, including Dr. H. E. Titus, of Lafayette, Indiana.

Dr. C. G. Glendening, "Case Reports."

His paper consisted of reports of peculiar cases of choking,

Case 1. Post-mortem revealed about 8 inches of the œsophagus near the stomach packed with the larvæ of the oestrus equi.

Case 2. Had symptoms of choking. No result from passing the probang. Post-mortem found hypertrophy of the heart.

Case 3 caused every one present to give their closest attention. These cases were those that most of the veterinarians have had to deal with more than usual the past season.

The animal develops rather suddenly the symptoms of a chronic roarer; some die in a very short time. A few cases were reported to have recovered. Some of those that live are left permanently affected.

Drs. Baker and Merillat have found by the use of microscope very marked indication of some form of bacterial invasion of the laryngeal muscles. They stated that they would be pleased to receive a subject or two for further investigation by the Professor of Pathology of the C. V. C.

Almost every one present took part in the discussion.

The noon hour having arrived, the meeting adjourned to meet at three o'clock p. m. All present then enjoyed a pleasant hour, supplying the inner man with the elaborate supply of the many good things from the tables of the Hotel "St. Nick."

At 1.30 o'clock all present went in a body to the State Capitol, where a reception was tendered by the Governor, Hon. C. S. Deneen, and the Board of Live Stock Commissioners. The following resolutions were read by Dr. A. H. Baker and presented to the Governor:

To the Hon. Charles S. Deneen, Governor of Illinois:

The Illinois State Veterinary Medical Association, in semi-annual convention assembled in Springfield, begs to express to you the following resolutions:

That Whereas, The veterinary profession in this State has advanced, progressed, and has been materially benefited by your aggressive, yet conservative administration; and

Whereas, Your recognition of the benefits of veterinary education as compared to empiricism has redounded to the welfare of the profession and will redound immeasurably to the welfare of the people of this State;

Resolved, That the thanks of the members of this association and the profession in general throughout this State are due, and are hereby tendered to you for the appointment of a properly qualified State Veterinarian, and for the extending and broadening of his powers. Also for your support and indorsement of the establishment of a School of Veterinary Science and Research in this State. Also for the enactment of the statute legalizing meat inspection under the supervision of the State Board of Live Stock Commissioners.

A. H. BAKER, V. S.,
L. C. TIFFANY, V. S.,
W. J. MARTIN, M. D. C.,
L. A. MERILLAT, V. S.,
ALBERT BABB, M. D. C.,

Committee.

The Governor responded in his pleasant way, assuring those present of his appreciation of the call and of his earnest desire to assist in elevating the veterinary science to its highest point of usefulness, and that he is giving his hearty support to the founding of the College of Veterinary Science and Research at the National Stock Yards, Chicago.

The Governor was then introduced and shook hands with every one present.

Three o'clock p. m. Reconvened. Paper by Dr. James Smellie, Eureka, subject, "Metritis in the Mare."

This subject proved to be very interesting, and elicited a very profitable discussion, which was indulged in by a large number. Nearly all agreed with the essayist that hot water douches with antiseptic was the most successful way of treating the trouble.

Paper by Dr. W. H. Welch, Lexington. Subject, "Interesting Lesions." This paper was listened to with much interest,

it dealing with pathological and anomolous conditions found in cryptorchid castration. It created a very animated discussion.

Dr. E. A. Jenkins, Shelbyville, presented a paper entitled, "Strangles of the Genitals," and contained some interesting features that brought forth a discussion of much interest to the country practitioner.

Dr. C. C. Mills, Decatur. "Some Things That I Have Observed." This paper was of much length and fully showed the scholarly attainment and ability of the essayist. The author offered some very commendable criticism to our State University for not having in its faculty a learned Pathologist. As one cause for his criticism, he read a very elaborate report of his experience and observation of the so-called "corn stalk disease" among the cattle. The University has made little or no effort to find the exact cause and, if possible, find a remedy. The Doctor praised the effort now being made by the State to establish a scientific veterinary college at the National Stock Yards in Chicago. This paper should be read by every farmer and stock raiser, and we trust it will be published in the farm and stock journals. A very animated discussion was indulged in by most every member present. Several theories were advanced, but the majority were of the opinion that the trouble was caused by something in the stalk and blade. The rotten corn theory was well sustained by the essayist, by citing many instances where he had made close observation and examination of cases, and was fully convinced that the trouble was due to the rotten corn. Several of the members thought differently, and stated that they knew numbers of farmers who let their cattle have free access to the piles of rotten corn that they threw out from their wagons when shoveling out the loads. The cattle showed no signs of the trouble until they were turned into the stalks.

On motion, discussion closed.

The following motion passed the second reading and was adopted by a unanimous vote:

"Members whose names have been dropped from the roll of the association for the non-payment of dues can be reinstated on their application being acted upon by the Board of Censors and Association, and then paying the regular membership fee."

(Signed.)

JOSEPH HUGHES,
J. T. NATRESS.

A motion was offered by Dr. A. H. Baker, seconded by Dr. H. B. Cale, that the Secretary receive twenty-five (25) dollars per session. Motion was carried by unanimous vote.

Communications were read and disposed of.

MEMBERS AND VISITORS PRESENT.

Dr. H. E. Titus, Lafayette, Ind.
Dr. J. F. Gillespie, Tuscola.
Dr. Geo. B. Jones, Sidell.
Dr. L. C. Tiffany, Springfield.
Dr. W. J. Martin, Kankakee.
Dr. W. H. Weathers, Magnolia.
Dr. E. A. Jenkins, Shelbyville.
Dr. G. W. Wolaver, Jr., Edinburg.
Dr. H. J. Man, Herscher.
Dr. Albert E. Worms, Chicago.
Dr. Alex. Eager, Chicago.
Dr. A. H. Baker, Chicago.
Dr. J. O. R. Campbell, Chicago.
Dr. John D. Lyle, Sparta.
Dr. D. L. Travis, Vandalia.
Dr. F. A. Laird, Auburn.
Dr. L. A. Merillat, Chicago.
Dr. J. H. Crawford, Harvard.
Dr. F. H. Barr, Pana.
Dr. C. C. Mills, Decatur.
Dr. R. E. Nesbett, Lincoln.
Dr. C. S. Haward, Mattoon.
Dr. M. M. Fletcher, Bethany.
Dr. B. F. Hudson, Mowequa.
Dr. Harry B. Cale, Macomb.
Dr. W. H. Welch, Lexington.
Dr. J. D. Nighbert, Pittsfield.
Dr. Albert Babb, Springfield.
Dr. J. T. Nattress, Delevan.
Dr. James Smellie, Eureka.
Dr. M. L. Hynes, Rantoul.
Dr. O. W. Winters, Arthur.
Dr. R. P. Frans, Stronghurst.
Dr. E. J. List, Havana.
Dr. N. I. Stringer, Paxton.

At the close of the meeting resolutions were adopted and presented to the management of the "St. Nicholas Hotel," for their courteous treatment and liberality in furnishing a parlor free of charge for the meeting. The following reply was received by the Secretary:

SPRINGFIELD, ILL., July 11, 1907.

Dr. N. I. STRINGER, Secretary, I. S. V. M. A., *Paxton, Ill.*:

DEAR DOCTOR:—We have yours of the 10th instant, expressing the thanks of the association for the accommodations extended during your twenty-fifth semi-annual meeting. We assure you this expression is appreciated by us, and we wish to return our thanks to the association for its patronage, and to advise you that the association will always be welcome to the accommodations which we may have at our command.

With best wishes, we are,

Yours truly,

ST. NICHOLAS HOTEL,

JOHN H. MCCREERY, Prop.

Per H. G. Clark.

With such splendid hospitality, and the splendid meeting that we had, no doubt the association will again choose Springfield for a meeting place in the very near future.

Meeting adjourned, subject to the call of the President.

N. I. STRINGER,

Secretary.

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

The Veterinary Association of the District of Columbia held their first meeting of the fall in Oppenheimer's Hall, No. 514 Ninth street, N. W. It was very largely attended, those answering to roll call being Drs. H. W. Acheson, F. M. Ashbaugh, Harry Bosley, D. E. Buckingham, W. P. Collins, Ralph Dunn, A. M. Farrington, J. C. Heide, John Lockwood, J. R. Mohler, W. P. Pointon, C. B. Robinson, Joseph Selby, J. P. Turner, H. Young, C. C. Weeks, J. P. Keifer, H. F. Hungerford, R. C. Talty and M. Page Smith. Drs. R. B. Blume and William F. Davis, of the Bureau of Animal Industry, were elected members. The work of the Board of Examiners in Veterinary Medicine for

the District of Columbia was discussed. (The inclosed clipping from the *Evening Star* of October 30, 1907, will show the activity of the board in connection with the prosecution of parties practicing veterinary medicine illegally.)

"AFTER HORSE DOCTORS—SOME PRACTICE WITHOUT REQUIRED LICENSE.

"The District Board of Veterinary Surgeons has begun the active prosecution of persons practicing veterinary medicine in this jurisdiction without a license, and in violation of the local laws and regulations on the subject.

"As a starter five cases were presented to the Police Court to-day. Alonzo Kavanaugh, itinerant veterinarian; Henry Joy, Harrison street, Anacostia; Henry C. Garges, 236 First street, southwest, and William Duvall, in charge of stables between D, East Sixth and Seventh streets, northwest, were all charged with being unlicensed veterinarians. Kavanaugh was fined \$20, Joy \$10 and Garges \$30. Duvall's case was continued for a couple of days. In addition to these Dr. William R. Pointon, a licensed veterinarian, was charged with refusing to exhibit his license, as required by the regulations. His case was continued until to-morrow.

"Since February 1 last veterinarians have been under practically the same regulations as general doctors and surgeons. They must obtain a license, and that is only possible after an examination in all branches of the science. Since the regulations have been put into effect, it has been found, the board states, that many men who handle horses as hostlers or horseshoers, etc., have held themselves out as veterinarians. The board desires to have that practice stopped, so that horses and other animals will receive scientific treatment from licensed men.

"Kavanaugh, the testimony showed, practiced around the horse bazaars. He pleaded guilty, and in default of the \$20 fine he was ordered to be committed to jail for fifteen days.

"Garges, it was testified, was visited by Dr. Buckingham, the head of the board, and treated a horse which the doctor presented. He pleaded guilty and paid \$30.

"Joy admitted on the stand that he took 50 cents from Detective Vanzant in payment for advice and for a bottle of liniment.

" 'How much did you pay for the liniment?' he was asked.

" 'A quarter.'

“ ‘What did you do with the other 25 cents?’ he was asked.

“ ‘I thought it was worth that for me to leave my business and get the liniment,’ he replied.

“ ‘You are guilty,’ the judge remarked. Joy was assessed \$10.”

Several papers of interest were promised for the next meeting.

F. M. ASHBAUGH, D. V. S.,

Secretary.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

The November meeting of the Veterinary Medical Association of New York City was held in the lecture-room of the New York-American Veterinary College, on Wednesday evening, November 6.

Owing to the absence of President Bell, who was unable to be present on account of illness, the Vice-President, Dr. Charles E. Clayton presided. There was a good attendance of members, as well as a number of visitors from out of the state, who were attracted by our program. The minutes of the previous meeting were read and approved, after which the Chairman introduced Dr. W. Byron Coakley, of New York City, who presented a very valuable and instructive paper on “Mastoiditis and Otitis Media, Suppurative and Non-suppurative, in the Dog and Cat.” His paper was made up entirely from data which represented careful original research work on these diseases. Numerous alcoholic and fresh specimens were exhibited and demonstrated to the members by Dr. Coakley. The post-mortem records of these cases were most complete and convincing.

Dr. V. A. Moore, of the New York State Veterinary College, Ithaca, N. Y., addressed the meeting on the subject of the recent famous Smoke Suit Case in the Deer Lodge Valley of Montana. Dr. Moore discussed the case principally from its pathological viewpoint, which proved to be of great interest.

Dr. R. J. Schreiber presented a dog suffering from the paralytic form of rabies. This case was examined by all the members with great interest, and Dr. Coakley, who is considered an authority on rabies, demonstrated on this case what he considered a diagnostic eye symptom of rabies. In this case the left eye was covered with a peculiar scum, under which the pupil was seen to be in what the doctor described as “pin point con-

traction," and uninfluenced by light; the cornea and conjunctiva were hæmorrhagic and analgesic. Dr. Coakley explained that atropine and cocaine applied directly to the eye would fail to influence the contraction of the pupil, and even when these drugs were given hypodermically in doses sufficiently large to produce death, the result is the same. Many of the members availed themselves of the opportunity of asking the doctor questions concerning rabies, and the subject was further discussed by Drs. Pierce, Moore, Clayton, Ackerman, Atchison and others.

Owing to the lateness of the hour, the case reports on rabies by Drs. Ellis and Gill were postponed, to be taken up at the December meeting.

On motion, a hearty vote of thanks was extended to Drs. Coakley and Moore for their valuable contributions to the evening program. The meeting adjourned at 11.50 P. M.

W. REID BLAIR,
Secretary.

RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

A meeting of this association was held at the Hospital of Drs. Dunn and Sullivan, in Providence, October 18, 1907. The following members responded to their names: Drs. J. A. McLaughlin, J. S. Pollard, U. G. Richards, F. de M. Bertram, C. T. Frey, L. T. Dunn, J. T. Chorlton, T. E. Robinson.

Visitors—Drs. E. J. Sullivan and W. E. Randall.

After a short business session, Dr. J. A. McLaughlin presented a very interesting paper, the subject of which was rabies, nearly every member taking part in the discussion. The members then adjourned to the operating room, where several operations were performed, the principal of which being resection of the lateral cartilage of the os pedis, for the cure of quittor, by Drs. L. T. Dunn and T. E. Robinson; removal of the fourth upper molar, operator Dr. F. de M. Bertram.

Dr. Frey administered the anæsthetic in both cases, chloroform being used.

T. E. ROBINSON,
Secretary.

NEWS AND ITEMS.

DR. A. MITCHELL, of Skaneateles, New York, is at present at Madagascar.

DR. H. D. PAXON (U. P. '93) is teaching meat inspection at the McKillip Veterinary College, Chicago.

DR. F. E. HAWORTH, Veterinary Inspector, B. A. I., has been transferred from Chicago to Indianapolis.

DR. F. D. HOLFORD has accepted a position with the Borden Condensed Milk Company, and is stationed at Sidney, N. Y.

DR. BRADFORD A. HYAN, Veterinary Inspector, B. A. I., has been transferred to the Bureau force at Buffalo, N. Y., from Chicago.

DR. I. G. WINSETT, formerly of Crisman, Ill., has recently bought a half interest in the Beatrice Veterinary Infirmary, at Beatrice, Nebraska.

DR. HORACE LAUGHLIN, of Bellecenter, Ohio, has been appointed veterinary surgeon, at a salary of \$2,100 a year, by the Panama Canal Commission, and has gone to the Isthmus.

DR. JAMES C. MCNEIL, of Pittsburg, Pa., a member of the State Board of Veterinary Medical Examiners, is a candidate for the Republican nomination for State Senator in Pennsylvania.

CHARLES W. BARRETT, D. V. S., N. Y. A. V. C., '06, formerly of Paterson, N. J., has been appointed City Veterinarian of Pasadena, Cal., where he has been located since his graduation.

"DR." ASA THOMAS, South Amboy, N. J., has been indicted by the Grand Jury of Middlesex County, in that state, for entering upon veterinary practice on the strength of a diploma from a correspondence school, known as the Veterinary Science Association of London, Ontario.

DR. J. L. TYLER (C. V. C., '91), who for two years has been connected with Dr. W. A. Connolly's Infirmary, at Los Angeles, Cal., has moved to Whittier, Cal., where he has formed a partnership with Dr. O. J. Osborn, who has a large practice already established. These gentlemen are building an up-to-date infirmary, 40 x 100 feet, with a capacity of seventeen stalls. They are installing one of Kyle Bros. improved operating tables, and every other appliance will be added to bring the infirmary up to the highest standard.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 8, 9, 10 & 11.	Philadelphia..	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	Jan. 9, 1908.....	Trenton.....	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb.....	Hartford.....	B. K. Dow, Williamantic.
New York S. V. M. Soc'y.....	Sept., 1908.....	Utica.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	Dec. 18, 1907.....	Reading.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Monthly.....	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	Boston.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.....		Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n.....			R. E. Freeman, Dexter.
Central Canada V. Ass'n.....		Ottawa.....	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	Feb. 4-5, 1908.....	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	April, 1908.....	141 W. 54th St.	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	Dec. 3-4, 1907.....	Chicago.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....			S. Beattie, Madison.
Illinois V. M. and Surg. A.....		Decatur.....	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	July 2-3, 1908.....	Raleigh.....	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....			C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	1st Wed., Dec.....	141 W. 54th St.	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	Jan. 14-15, 1908.....	Columbus.....	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh.....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....			E. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	January, 1908.....		J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	Jan. 28, 29, 30, '08.	Cedar Rapids.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	2d Wk. Th. Jan.	St. Paul.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	March, 1908.....	Philadelphia..	F. H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	A. W. Ormiston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n.....		Denver.....	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	Feb., 1908.....	Kansas City..	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	Jan. and June.....	Providence...	T. E. Robinson, Westerly, R.I.
North Dakota V. M. Ass'n.....			C. H. Martin, Valley City.
California State V. M. Ass'n.....	Mch. Je. Sep. Dec	San Francisco	C. M. Haring, U. C., Berkeley.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy. Oct.	Los Angeles..	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....			E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....			Hans Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	Jan. 2-3, 1908.....	Manhattan.....	Hugh S. Maxwell, Salina.
Ass'n Médéciale Veterinaire Française "Laval".....	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A.....		Mon. and Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	Nov. 19, 1907.....	Not decided...	D. A. Piatt, Lexington.
Washington State Col. V. M. A.....	Monthly.....	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.....	An'l, Jan., '08.....	Indianapolis..	E. M. Bronson, Indianapolis.
Louisiana State V. M. Ass'n.....			E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu. ea. mo.	St. P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A.....			Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n.....	Xmas week.....	Auburn, Ala.	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....			C. L. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn.....	June, 1908.....	Philadelphia..	B. T. Woodward, Wash'n, D.C.
Virginia State V. M. Ass'n.....			S. C. Neff, Staunton.
Oklahoma V. M. Ass'n.....			W. H. Martin, El Reno.
Veterinary Practitioners' Club.....	Monthly.....		A. F. Mount, Jersey City.
Vet. Ass'n Dist. of Columbia.....	4th Wed. ea. mo.	514—9th St., N. W.	
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	F. M. Ashbaugh, Wash., D. C.
Arkansas Veterinary Society.....			J. Madsen, Chicago, Ill.
York Co. (Pa.) V. M. S.....	Dec. 3, 1907.....	York, Pa.....	B. H. Merchant, Little Rock.
Philippine V. M. A.....			E. S. Bausticker, York.
Montana State V. M. A.....	Oct., 1908.....	Helena.....	R. H. McMullen, Manila.
Veterinary Ass'n of Alberta.....			C. H. H. Sweetapple, Fort Saskatchewan, Alta., Can.

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Owing to the requirements of the new law governing the transmission of second-class matter in the mails between the United States and Canada, it is now necessary to affix postage stamps on periodicals mailed to Canada at the rate of one cent for each four ounces or fraction thereof—instead of sending them as heretofore by pound weight at one cent a pound. We would like to convey clearly to our Canadian subscribers that we are not charging them any more for the REVIEW, but are adding the twenty-five cents a year to meet the extra postage we are compelled to pay owing to the new postal law, which has been in effect for a few months, but we have deferred making any change before the new year.

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THE RECH-MARRAKER CO., OF PHILADELPHIA, whose advertisement appears on page 5 (Advertising Department), recently delivered to Dr. ELLIS, of the REVIEW, a beautiful HORSE AMBULANCE, strictly up to date; which they had been building during the summer months, under the Doctor's personal supervision.

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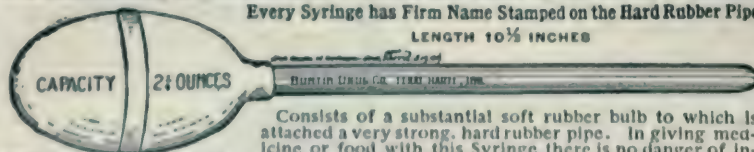
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109	Aconitine, Crystals.....	1-20 grt.	15
116	Aconitine, Crystals.....	1-10 grt.	17
117	Aconitine, Crystals.....	1-6 grt.	23
118	Aconitine, Crystals.....	1-4 grt.	27
159	Arecoline Hydrobrom.....	$\frac{1}{2}$ grt.	1 00
160	Arecoline Hydrobrom.....	1 grt.	15
101	Atropine Sulphate.....	1-4 grt.	18
121	Atropine Sulphate.....	1-2 grt.	33
119	Atropine Sulphate.....	1 grt.	18
158	Barium Chloride Comp (Ellis).....	7 grs.	25
	{ Digitaline.....	1-12 grt.	
152	Cardiac Tonic.....	{ Digitaline, Pure..... 1-10 grt. Sparteine Sulph..... 1-5 grt. Strychnine, Nitrate..... 1-8 grt. }	
102	Cocaine Muriate.....	1 grt.	35
124	Cocaine Muriate.....	1- $\frac{1}{2}$ grs.	45
125	Cocaine Muriate.....	2 grs.	55
120	Cocaine, $\frac{4}{5}$ grs. for Veterinary Anesthesia.....		1 10
	(One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.)		
103	Colchicine.....	1-4 grt.	60
126	Colchicine.....	1-2 grt.	1 00
127	Colic (Knowles).....	{ Morphine Sulph..... 2 grs. Atropine Sulph..... 1-4 grt. Aconite Cryst..... 1-20 grt. }	65
104	Conline Hydrobromate.....	1-2 grt.	43
128	Conline Hydrobromate.....	1 grt.	60
105	Digitaline, Pure.....	1-8 grt.	30
129	Digitaline, Pure.....	1-4 grt.	35
156	Ergotine.....	2 grs.	18
157	Ergotine.....	4 grs.	27
113	Eserine Salicylate.....	1-4 grt.	50
133	Eserine Salicylate.....	1-2 grt.	75
134	Eserine Salicylate.....	1 grt.	1 25
135	Eserine Salicylate.....	1 $\frac{1}{2}$ grs.	1 50
106	Eserine Compound.....	{ Eserine Salicylate..... 1-4 grt. Pilocarpine Muriate..... 1-2 grt. Strychnine..... 1-8 grt. }	1 00
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134	Colic (Forbes).....	{ Eserine Salicylate..... 1 grt. Pilocarpine Mur..... 3 $\frac{1}{2}$ grs. }	2 75
107	Hyoscyamine Sulphate, Crystals.....	1-8 grt.	1 00
146	Hyoscyamine Sulphate, Crystals.....	1-4 grt.	1 50
108	Morphine Sulphate.....	1 grt.	25
136	Morphine Sulphate.....	1 $\frac{1}{2}$ grs.	35
137	Morphine Sulphate, Crystals.....	2 grt.	40
138	Morphine Sulphate.....	2 $\frac{1}{2}$ grt.	50
155	Morphine Sulphate.....	3 grs.	60
109	Morphine and Atropine.....	{ Morphine Sulph..... 1 $\frac{1}{2}$ grs. Atropine Sulph..... $\frac{1}{2}$ grt. }	45
139	Morphine and Atropine.....	{ Morphine Sulph..... 1 $\frac{1}{2}$ grs. Atropine Sulph..... $\frac{1}{4}$ grt. }	45
140	Morphine and Atropine.....	{ Morphine Sulph..... 2 grs. Atropine Sulph..... 1-4 grt. }	55
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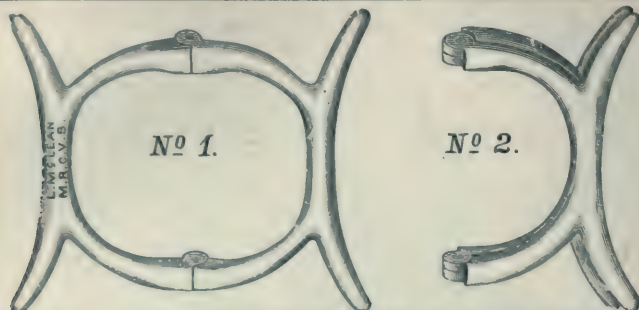
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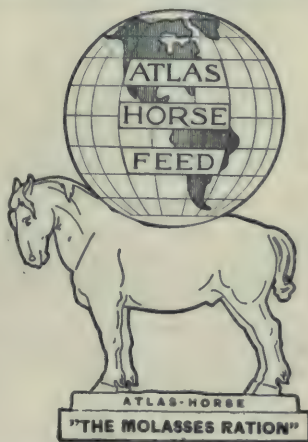
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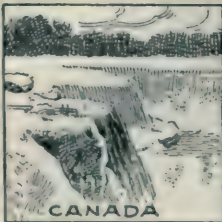
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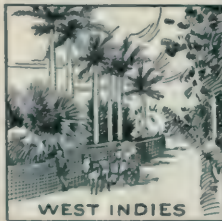
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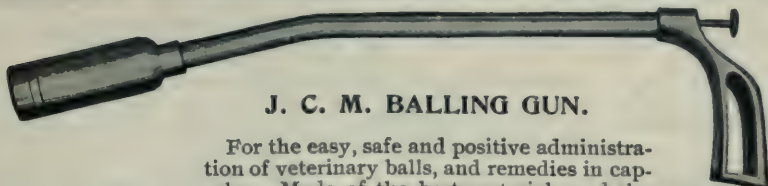


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AMERICAN VETERINARY REVIEW.

JANUARY, 1908.

EDITORIAL.

THE "REVIEW" AGAIN STRENGTHENED.

The continued illness of Dr. Bell has made it necessary to select an additional permanent member of the REVIEW's editorial staff. In searching the field for one whose many-sided abilities, incessant energy, intense professional loyalty, and broad knowledge of the condition of the science and profession in this country, we found in our list of collaborators one whom we believe to be an ideal occupant of the position.

Therefore, we beg to announce that, beginning with the present number, DR. WILLIAM HERBERT LOWE, of New Jersey, will contribute in large proportion to the editorial work of the REVIEW. While Dr. Bell will assist in the conduct of the REVIEW so far as his health will permit, his present condition will not justify great reliance upon his time.

Dr. Lowe needs no introduction to the profession of America, as his long and prominent labors in behalf of his profession, his recognition by the profession in a hundred ways, have made his name familiar wherever veterinary progress is being made.

We therefore take much pleasure in announcing this important addition to the REVIEW's ability to serve the profession in the best manner.

R. W. E.

EXCLUSION OF MILK FROM NON-TUBERCULIN TESTED COWS.

The Board of Health of the town of Montclair, N. J., in legislating that all cows supplying milk to that town shall be proven by the tuberculin test to be free from tuberculosis, appears to have taken a position in this matter in advance of most other municipalities in this broad land. It is to be hoped, however, that in its earnestness to eliminate all traces of tuberculosis through the agency of tuberculin that it will not lose sight of other factors and conditions that are quite as essential to the production of a good, sound, wholesome and nutritious milk supply as the test itself.

The new sanitary code provides that no milk shall be sold, offered for sale or distributed in Montclair except from cows which have been examined and tuberculin tested within a year by a veterinarian whose competency is vouched for by the State Veterinary Medical Association of the State in which the herd is located. A certificate of health, together with a temperature chart showing the record of the test of each individual animal, signed by the inspecting veterinarian, has to be filed in the office of the local Board of Health before the sale of milk will be allowed.

The object of the Montclair Board in issuing its edict in regard to the requirement of the tuberculin test, is to reduce, if possible, the high mortality which prevails in Montclair, as elsewhere, from tuberculosis among the human population, tuberculosis having caused 12.2 per cent. of all deaths in that town during the past year.

The greater portion of the milk supply of Montclair is said to come from one large concern. When the edict was issued this concern promptly gave notice to its customers that it would have to withdraw much of its supply at once, and a milk famine was threatened. Thereupon the Board of Health decided to give producers six months' longer time in which to submit to the required test.

The testing of all cows supplying milk to Montclair, or to any other place of like size, is a big undertaking if the work is properly and honestly done by capable veterinarians. If it cannot be properly and honestly done it had better not be attempted, for it would be unwise to remove danger signals until all possibility of danger is eliminated. The testing of a large number of dairy cattle will cost in proportion and will entail immediate pecuniary loss to owners of animals showing traces of the disease. It must be remembered that while Montclair can refuse to accept milk from untested cows, yet she has absolutely no authority to condemn or destroy cows belonging to dairies outside the limits of her own municipality, and it is from outside sources that much, if not most, of the milk supply comes. *It will require the supervision of the State and of the Federal Government, in connection with the work of local authorities, to give protection to the public in general—that protection which Montclair would afford to her own citizens.*

Montclair, however, deserves due credit and should receive encouragement and support from public hygienists and sanitarians. It is earnestly to be hoped that she may be able to surmount all obstacles that now seem to stand in the way of the accomplishment of what she has laid out to do, for after all it is the benefits resulting from scientific and professional work that warrant and justify the same, at least in applied science.

W. H. L.

ANIMAL HOSPITAL FOR TEACHING STUDENTS OF HUMAN SURGERY.

Medical men are beginning to appreciate the practical value of veterinary science and art in teaching human medicine and surgery. As an evidence of this we might refer the reader to a circular letter from the Cornell University Medical College, New York City, under date of Dec. 16, 1907, to veterinarians announcing the establishment of an Animal Hospital and Dispensary at 408 East Twenty-sixth street, in that city.

A strong appeal is made to veterinary practitioners to send them such animals (horses and cattle excepted) as they do not care to treat. Veterinary practitioners now have a place, besides the veterinary college, to send animals suffering from surgical conditions when the owner is too poor to pay for a required operation or is unwilling to incur the expense, and thus avoid the necessity for the other alternative of chloroform and a painless death.

Emphasis is made to the statement that animals are received for medical and surgical treatment, and in no sense for the purposes of experimentation. It is clinical and pathological material for *teaching purposes* that is desired. It is proposed to accept for treatment animals with surgical conditions of whatever kind. All branches of surgery will be represented on the staff of the hospital, including Ophthalmology, Otology, Laryngology, Gynæcology, Genito-Urinary and General Surgery.

The REVIEW believes that the medical faculty will find that the step they are taking will be of untold advantage in teaching students of human medical and surgical science, especially if they have on the staff trained veterinarians versed in comparative medical science and familiar with animal life, habits and conditions.

In the presidential address delivered before the American Veterinary Medical Association at New Haven, Conn., in 1906, the practical value of just this very thing was pointed out. The REVIEW feels a certain self-satisfaction in realizing that the voice from our profession is occasionally heard and heeded in that which concerns the well-being of man.

W. H. L.

EUROPEAN CHRONICLES.

PARIS, FRANCE, NOV. 15, 1907.

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.
—I am afraid that I will be considered as rather too late in reporting the work done at the Fourteenth International Congress

of Hygiene and Demography, which was held last September in Berlin. But, besides the peculiar obligations under which I am working by sending my chronicles on the 15th of each month, it sometimes happens that my material reaches me just when my monthly communication has been mailed. So it was in this case. At any rate, here is a concise extract from the *Revue Generale* of what may be most interesting to our readers. It is on the subject of the Etiology of Tuberculosis.

The Congress was held in Berlin from the 23d to the 29th of September with about 2,000 members present out of nearly 4,000. There were eight sections and numerous and interesting questions were discussed, among which were: Etiology of Tuberculosis, new methods of immunization, pathogenous protozoars, insects as propagators of disease (especially ticks), etc., etc. It was in the first section that came the subject of "Etiology of Tuberculosis." It attracted the largest assistance. Prof. Arloing was one of the reporters. He presented his report defending the thesis of the variability of the bacilli of tuberculosis. He showed that the various types accepted by many authors were rarely realized in a perfect manner and that they were related to each other by intermediate forms, and finally that there would be a real danger to take these transitory differences to establish principles of prophylaxy.

Prof. Ravenel, of Philadelphia, presented the records of experiments and statistics which proved that the alimentary tract was often the door of admission of the tuberculosis bacilli. They may pass through the mucous membrane, principally during the digestion of fatty substances, without giving rise to any lesions. They pass with the chyle and reach the lungs, where they are held in large quantity. This infection is specially frequent among children, and the milk of tuberculosis cows is a cause, probably very serious, in the infection.

Prof. Flugge, of Breslau, advocated the pathogenous action of inhalation. Experience has shown that infinitesimal doses insure infection by the respiratory tract. For man the lung is the

far more frequent means of entrance of the bacillus than the intestines.

Dr. Ribbert, of Bonn, remarked that in human cadavers the bronchial glands and the lungs are most often exclusively the seat of lesions. Intestines act only a second part.

Dr. von Schrotter, of Vienna, believes by his observations of post-mortem that the lungs are invaded in most cases.

The discussion was very interesting, but no positive conclusions were arrived at: It showed that if there was unanimity in admitting the possibility of penetration of the bacilli by the respiratory and by the digestive tracts, it remained undecided which of the two had a relative frequency in the various species.

* * *

Of the other subjects that occupied the attention of the Congress I have but little information. On the question of the "New Methods of Immunization," the reporters agreed that if new modes have been advanced during the last years, nevertheless the question of immunity remains still as complex and without general possible application.

Reports were made by veterinarians in the second section. "Upon the Generalized Inspection of Meats to the Point of View of Prophylaxy," by Mr. Martel and Prof. Ostertag, and "Upon the Production of Pure Milk" by Prof. Porcher.

In connection with the Congress, there was an exhibition of specimens and documents upon the etiology, the pathological anatomy, the prophylaxy and the therapy of infectious diseases. The collection came from the Superior Veterinary School of Berlin, and belonged to Prof. Ostertag.

The next Congress will be held in Washington in 1910.

* * *

If I have been behind time for the preceding Congress, I do not want to be for the "International Congress of Tuberculosis," which is to take place at Washington, from the 21st of September to the 12th of October, 1908, under the patronage of the

American Association Against Tuberculosis. The general secretary is Dr. John S. Fulton, 810 Colorado Building, Washington, D. C., from whom I suppose all information can be asked. I hear that the Congress will be composed of seven sections, the last of which will be of greatest interest to veterinarians and also to those who are working in comparative pathology. The fact that our friend and collaborator, Prof. Leonard Pearson, is the president of that section, will no doubt add considerably to the importance that American veterinarians will see to be present at that Congress and contribute to some of the questions that will be presented.

But this little notice is only to mention the prospects of the Congress, and there is no doubt that Dr. Pearson will soon call the attention of his *confreres* in America to this great international gathering, if he has not done so already.



CHRONIC HYPERTROPHIED ENTERITIS.—Some time ago Prof. Leclainche, in his excellent semi-monthly, published an article upon "Chronic Hypertrophying Enteritis," which I cannot allow to pass without giving it the notice it well deserves.

The history of this affection is briefly this: It was in 1845 that for the first time the attention was called to that disease by Johnes and Frothingham. In 1903 Markus recorded one case and stated that, like the preceding authors, he had found that the intestinal lesions and the mesenteric lymphatic glands contained numerous acido-resisting bacilli. Overbeck also made several observations of the disease and said that diseased cattle did not react to the tuberculine test. In 1906 Lieneaux and Van den Eeckhout experimented with guinea pigs and succeeded in infecting most of them. They consider the disease as an attenuated form of tuberculosis. Borgeaud and Galli Valerio demonstrated that the lesions are not tuberculous, and finally, in 1906, Bang studied systematically the affection and gave a good description of it.

Animals of from two to six years are those which are principally affected with it. The onset of the attack is insidious, and its progress slow. Generally there is diarrhœa. The appetite is kept for a long time, and yet the animals lose flesh a little by little. There is no fever and a long comatose condition is present before death, which is certain to come. The lesions exist principally upon the posterior part, posterior half of the small intestine. The mucous membrane is thickened, wrinkled, and in the furrows of the transversal folds it appears warty, but without ulcerations. Peyer's patches are a little tumefied and some congested spots are found here and there disseminated. With the microscope the villi are seen deformed, hypertrophied by the accumulation in the chorion of numerous epitheloid cells, among which sometimes some giant cells may be found. The glands of Lieberkuhn are normal. The mesenteric glands are hypertrophied, but without nodular lesions. Under the microscope they appear infiltrated with epitheloid and giant cells.

In examining sections of glands and of the intestines, thick masses of acido-resisting bacilli are found, coloring with Ziehl, Gram, blue of Kuhne and Giemsa.

Bang does not accept the tuberculous character of enteritis, as he has not succeeded in obtaining cultures nor in inoculating the bacilli to various animals, when these did not, with the enteritis, have at the same time tuberculosis (say of the lung). At any rate, the cows that he did examine did not react to tuberculin.

The disease cannot be transmitted experimentally from bovines to bovines.

Hypertrophying enteritis exists in a great part of Europe and in particular in France. It certainly does not seem to have anything to do with tuberculosis. Its strictest localization in the intestines, the absence of tuberculous lesions in the glands, the histological aspect, the numerous failures in the attempts of inoculation to animals which are ordinarily reactive agents of tuberculosis, the absence of reaction of the animals when they are tuberculed, all these are evidences against the idea of tuberculosis.

As far as the presence of the acido-resisting bacilli is concerned, it is known that the homology of coloration of pseudo-tuberculous subjects is far from being sufficient to carry with itself the identity of the acido-resisting bacilli with that of the bacillus of Koch.

To resume, hypertrophying enteritis is a nosological entity, characterized by an incoercible diarrhoea and a progressive loss of flesh. Numerous acido-resisting bacilli are often found in masses in the fœces and in the invaded mucous membrane of the rectum.

The disease being contagious, consequently sick animals must be isolated; slaughtering is certainly the economical measure indicated, and disinfection of all parts that may have been infected by the excrements, are the essential sanitary measures that this affection demands.

FOLLICULAR MANGE AND ITS TREATMENT.—Everyone knows how rebellious follicular mange is, generally speaking, to any kind of treatment. Due to a small parasite, the *Demodex folliculorum*, which lodges itself in the skin of dogs, not on the surface, but, contrary to other parasites, in its thickness, the hair follicles, the sebaceous glands, and those of Meibonius, where it is found ordinarily in large numbers, in a single spot, arranged parallel along the root of the hairs, with the head turned towards the thickness of the dermis, its contagious nature, with the peculiarities that it presents, and the great difficulty that one meets in finding against it a successful treatment, all render the disease that accompanies its presence of great interest to every practitioner.

In the *Annales de Bruxelles*, Prof. Hebrant and his assistant, Mr. Antoine, published on "The Dermodectic Mange of Dogs and Its Treatment" a general review of the disease and of its therapeutv. For these writers the symptoms vary but little; still they may by their aspect allow the division of three types or forms, a dry or superficial, one pustular and a chronic.

The first is characterized by the presence of an acute dry eczema, with little itching, and depilation and redness generally

not much marked. The skin seems healthy and has no pimple, but examination with the microscope of the epidermis scrapings reveals the presence of the parasite.

The second may develop after the first form, but most ordinarily exists from the start. The animal has here and there hairless cutaneous spots, very red, with a bluish tint, if the skin is pigmented. This tegument is thickened, wrinkled, and presents pustules, from which a sero-purulent or bloody fluid can be squeezed out and in which loads of parasites are found.

In the third form, the skin is entirely hairless, is much thickened, much wrinkled and covered with pustules and epidermic desquamation, soon transformed into crusts. The peculiar *sui-generis* odor that dogs with follicular mange exhale, is almost characteristic of its presence.

The diagnosis of the disease is easily made out. It demands only the detection of the parasite, and Belgian teachers advise that an examination be made in ALL cases of skin diseases, even the most benignant, so as to detect the presence of any parasite, vegetal, or animal, if any is present.

In the consideration of the treatment, Prof. Hebrant examines the various methods under three headings—the medicamentous treatment, the surgical and the mixed.

In the first, parasitic agents which have been used are reviewed: sulphur and its compounds, sulphate of zinc, iodine in tincture, the various compounds of mercury, nitrate of silver, nitric and carbolic acids, creolin, variations of tars (mineral, vegetable or animal), naphthol, epicarin, petroleum, spirits of turpentine, ichthyol, balsam of Peru—all of which, among many failures in the results, have, however, given satisfactory recoveries in some cases and have been advocated by many European authorities.

As surgical treatment proper, only one is mentioned—that recommended by Prof. Cadeac, consisting, when the disease exists only on limited surfaces in the simple excision with the bistoury of the diseased cutaneous spots and the application of the

means, ordinarily resorted to, to obtain the cicatrization of the wound thus made.

So far as mixed treatment is concerned are mentioned: that of Cadeac, squeezing or excising of the pustules, followed by sprays of carbolized solution; that where the authors leave the carbolized water aside, and coats of tobacco juice are painted over the parts, or again, the one where alcohol is used instead: or, also, the one where the diseased spots are closely shaved, a circular incision is made, so as to prevent the parasite from going on another part beyond the affected one which is, after being scarified, thoroughly coated with tincture of iodine. Finally, this last method has been modified by, instead of scarifying the skin, it is rubbed with a coarse brush until blood oozes out, and then the tincture of iodine is applied. With this, recoveries have been obtained in about one month.

It appears that by using any of these various modes of treatment, if a recovery is obtained, it is only after a duration of close attention lasting weeks and months.

On this account the relation that I find in the *Journal de Wootechnie*, by Prof. Nicholas, of the Lyon School, will be read with interest. It is a treatment which in his hands has relieved dogs severely affected in fifteen days, several cases being recorded of its efficacy. The Professor says: "As the difficulty is to have the parasitic agent penetrate into the thickness of the skin, where the parasite lives, we have thought that this result could be obtained by injecting with the syringe of Pravaz in the thickness of the dermis, antiparasitic solutions, such as carbolic acid at 2 and 3 per cent., or tincture of iodine. After 4, 5 or 6 days the redness and the pustules have disappeared and after 8 days hairs began to grow. No matter what is the number or the size of the diseased patches, with a little patience and perseverance all the symptoms subside readily." * * * "to obtain a rapid recovery, injections must be made every day without interruption; injecting must be not only upon the seat of the lesions, but also a little around it on the healthy skin, using solutions of mod-

erate concentration and with very fine needles on the syringe, so as to avoid necrosis of the skin at the points of injection. An essential condition of success is also to see that the kennels are kept thoroughly disinfected and cleaned."

Under the influence of this treatment, improvement is soon noticed; after the third or fourth day the skin is not so thick, it loses its redness and on its surface small scabs are formed, which soon fall off and leave the new hair growing. The treatment, however, must not be stopped too soon, but has to be kept up for a while. It is perfectly harmless.

The results that have been obtained by this treatment are such that practitioners in the canine specialty will do well to give it a good trial.

THE TREATMENT OF TETANUS.—Can these be used in our daily practice or not, is a question that I am not prepared to answer. But as, after all, they have succeeded in the hands of others, although on patients different from ours, it is not proper to ignore them. I am alluding to two preparations which have been used by two Italian physicians of Rome, Drs. Almagia and Mendes. One of them in previous researches has attempted to discover what was the substance which, in the so-well known experiment of Wassermann and Takaki, fix the tetanic toxine upon the nervous tissue. He arrived at the conclusion that lecithine and cholesterine possess properties of fixation similar to the entire nervous substance. The power of fixation and of neutralization of the tetanic toxine is much more developed with cholesterine than with lecithine. These discoveries decided Almagia to try, with a certain success, the injections of cholesterine as a preventive means in animals primitively inoculated with toxine. In two cases of human tetanus, these two doctors resorted to these injections and have obtained two recoveries.

In one case, it was a severe attack of lockjaw, with respiratory troubles, acceleration of the beatings of the heart, notwithstanding massive doses of antitetanic serum. With injections of cholesterine made in doses of 15, 30 centigrams and then of

one and of one and a half grammes, the symptoms began to retrocede after the fifth day.

In the second case, the attack was also severe and the progress of the disease rapid, the injections of cholesterine formed the exclusive medication. As much as 2 grammes and 80 centigrams were injected in one day.

Not considering these two cases as cases of chronic tetanus developing with a spontaneous march towards recovery, the authors believed that injected as they did, cholesterine truly neutralizes the toxine as soon as it is produced and thus gives the organism a chance to rid itself of the toxine already existing and fixed upon the nervous centers and also of the bacilli.

If the observations can be realized with our animals may be an interesting question to solve. But, again, there is the question of expense. Cholesterine would have to be injected in rather large doses, and it is no doubt costly.

ATTENDANCE AT EUROPEAN VETERINARY SCHOOLS.—For many, this is the age of automobiles—autos for all kinds of work, from that of heavy carting to the elegant coupés and victorias, without forgetting the public conveyance, the auto-bus! And for the enthusiastic admirers, it is not difficult to reach the stern conclusion: The future of the veterinarian is doomed!

Is it? Not in the estimation of all. And a statistic that I find in one of our scientific papers here tells us that the fears of the disappearance of the horse by the fantastic growth of the number of automobiles all over the world are not so very great with all, and that, after all, the future number of members of the veterinary profession is far from diminishing.

The statistics I refer to gives the names of 27 schools in Europe with the number of students that were attending in 1905. Indeed, 6,039 students were registered in that year in the following schools, arranged according to their respective numbers of attendants: Kasan, 582 students; Kharkow, 504 students; Berlin, 482 students; Budapest, 413 students; Vienna, 377 students; Copenhagen, 370 students; Madrid, 345 students; Munich, 319

students; Dorpat, 310 students; Alfort, 292 students; Saragosse, 275 students; Hanover, 251 students; London, 230 students; Dresden, 202 students; Naples, 200 students; Lyon, 180 students; Toulouse, 177 students; Bruxelles, 153 students; Milan, 158 students; Utrecht, 113 students; Leon, 100 students; Stuttgart, 100 students; Turino, 90 students; Cordoue, 75 students; Stockholm, 55 students; Bucharest, 52 students; Lemberg, 47 students.

And in this list are not mentioned the other four British schools: the Veterinary Department of the University of Liverpool, the Dick Veterinary College of Edinburgh, the Glasgow Veterinary College and the Royal Veterinary College of Ireland at Dublin. Likewise are missing the records of the schools of Berne, Zurich, Pisa, Bologna and several others.

It would be interesting if we were able to add to these the list of colleges and of students attending the numerous institutions of the New World, North and South America and other countries. So far the only statistics that we have is that made by Prof. Williams, where it is said that out of 18 schools, 1,941 students had been registered.

A. L.

THERE is within the territory of the United States something like 300,000,000 acres of public grazing land which is open to the free grazing of cattle, sheep, horses and goats without restriction.

ENORMOUS ENLARGEMENT OF INTERNAL ORGANS.—Veterinarian James T. Shannon, Lexington, Ky., reports result of an autopsy made on the stallion Intrusive as follows: "The spleen was very much increased in size; length 36 inches, width 20 inches on the under part, weight 24 pounds. Liver very much increased in size; weight 30 pounds; kidneys very much increased in size, weight 2 pounds 2½ ounces each. Heart enlarged, wall thickened, weight 15 pounds. Other organs normal." Intrusive died suddenly, having been sold at public auction the day before apparently in good health and in fine condition.

ORIGINAL ARTICLES.

OBSERVATIONS ON THE VETERINARY SCHOOLS IN EUROPE.

PROF. PIERRE A. FISH, ITHACA, N. Y.

Presented at the 44th Annual Meeting of the American Veterinary Medical Association, at Kansas City, Mo., September 10-13, 1907.

During a recent visit to Europe, twelve veterinary colleges distributed throughout six different countries were visited. There were varying conditions in these countries and as the methods and customs were quite different from those in America, a brief description may be of some interest.

In the order in which they were visited, the Liverpool Veterinary School comes first. This school forms part of the University of Liverpool. The course of instruction is four years long, each year being divided into three terms of about ten weeks. There are about sixty students. The requirements for entrance are English, grammar, arithmetic, algebra, geometry, Latin and one of the following optional subjects: Greek, or any modern language or logic. A note in their catalog for 1905-6, however, states that "as there is a probability in the near future of a university degree for veterinary surgeons, candidates are strongly advised to, if possible, pass a high standard preliminary examination—that is, one which will qualify for university graduation."

The tuition to cover the instruction is eighteen guineas, or a little more than \$90 per year. The strictly veterinary portion of the work is carried on by Professor W. O. Williams and Professor Share-Jones, with assistants. For the remaining work the students mingle freely with the university medical students in the various departments.

There is no clinic at the University, but the corporation of Liverpool has placed its horse depots, including over six hundred horses, and Veterinary Infirmary at the disposal of the veterinary staff of the school for purposes of instruction. The students of the fourth year also attend the indoor clinics of some of the veterinary establishments in the city.

I understood also that veterinarians who were qualified might obtain the degree D. V. H., Doctor of Veterinary Hygiene, by devoting two terms to the study of the appropriate subjects at the University.



FIG. 1—CANINE HOSPITAL, LIVERPOOL.

The Royal Veterinary College of London was founded in 1791, and incorporated in 1875. According to its latest catalog the University of London has recently instituted a Degree in Veterinary Science (B. Sc.). "The possession of this degree will not of itself entitle the holder to practice as a veterinary surgeon, but it is hoped that year by year an increasing number of students will, while studying for the diploma of the Royal College of Veterinary Surgeons, also adopt the curriculum which

is necessary to qualify for the University examinations and obtain the degree of Bachelor of Science. In conformity with the statutes of the University, the Professors of Chemistry, Biology, Anatomy, Physiology, Hygiene and Pathology in the Royal Veterinary College are recognized teachers in the University.

Four years of study are required at the Veterinary School for a student to be eligible for the examinations given by the Board of the Royal College of Veterinary Surgeons. It is expected that an additional year must be taken in order to acquire the University degree.

The entrance requirements are much the same as for the school at Liverpool and include: English Language, Latin, Arithmetic, Algebra, Geometry and one optional subject, either Greek or one of the modern languages.

From Oct. 1 to about the middle of March there are two terms. A summer term begins May 1, and continues to about the middle of July.

A novel method for raising revenue exists in this college. A person or firm properly approved and elected becomes a "Subscriber" to the college. Persons who contribute twenty guineas (about \$100) in one sum are life subscribers, otherwise they pay two guineas (about \$10) per annum and are entitled to the privileges of a subscriber so long as they continue their subscriptions. A subscriber has the following privileges: He may have in the course of any year five horses examined for soundness free of charge either before or after purchasing. Any additional horses are charged for at the rate of 10s. 6d. (about \$2.50 each). He may have admitted into the Infirmary for medical and surgical treatment an unlimited number of horses and other animals *his own property* at a charge only for their keep.

He may be supplied with medicine for *his own* animals at a fixed charge.

At a fixed rate he may have at the college a chemical analysis of any water, provender, oil-cake or other feeding material,

or of the viscera and their contents of any of *his own* animals suspected of having been poisoned.

He may have the opinion of one of the professors without the payment of a fee as to the medicinal treatment of any of *his own* animals, brought for this purpose to the college, which he may desire to retain in his own keeping.

In cases of extensive or serious outbreaks of disease he may have an investigation made into its nature and causes with a view to its prevention or cure, on payment of the fixed charges.



FIG. 2.—ROYAL VETERINARY COLLEGE, LONDON, COURT FACING THE ENTRANCE.

He may have a post-mortem examination of any animal, or parts of an animal, sent to the college, and receive an opinion of the probable cause of death on payment of a fixed charge.

The professors are not allowed to examine horses as to soundness out of the college, nor visit sick animals except by special permission of the Principal or Professor in charge, and then only for the purpose of consultation with a veterinary surgeon or with the object of the removal of patients to the Infirmary for treatment.

The sick animals of the subscribers constitute the internal clinic of the college. This clinic is under the direction of Professor Penberthy (Medicine) and Professor MacQueen (Surgery), each professor having charge two days alternately. The students do not participate in this clinic to any extent except as onlookers. There is also an external clinic, which is in charge of Professor Woodruff (Materia Medica). There is a nominal charge of 1s. (25 cents) to enter the patients in this clinic. A great many cases are examined here and the students of the



FIG. 3.—VETERINARY HOSPITAL AND LECTURE ROOMS (UPSTAIRS), UTRECHT, HOLLAND.

fourth year take an active part in performing minor operations and keeping records. Two hours in the forenoon and two in the afternoon are devoted to the clinics.

The tuition is twenty guineas a year (about \$100). In addition there is a fee of 1 guinea to the library and reading room fund to be paid prior to entry and a further fee of 10s. 6d. annually. The number of students in attendance is about 200 and the number is diminishing. It is believed by some that the

decreasing attendance is due to the automobile 'bus service in London.

The veterinary school at Utrecht under the directorship of Professor Wirz is the only school of its kind in Holland. Like the schools in England it has a four year course. There are 'quite extensive grounds with a number of buildings. There are about 140 students in attendance. The clinical hours are in the forenoon from 10 to 12. The clinics are free as to consultation and medicine, but there is a charge for the fodder that the animal consumes. I was informed that there is a good demand for veterinarians in Holland and that they do well.

Some idea of the work accomplished may be obtained by glancing over the following table, taken from the catalog of this school for 1904-5. The table represents the number of cases treated in each clinic during the period of one year:

	Stationary Clinic.	Consulting Clinic.	Ambulatory Clinic.	Total.
Horses and Asses.....	413	901	89	1,403
Cattle	32	260	447	739
Sheep .....	....	5	1	6
Goats.....	12	57	3	72
Varkens (swine).....	....	27	11	38
Dogs	223	1,413	2	1,638
Cats .....	....	296	....	296
Birds .....	....	432	....	432
Other animals.....	68	....	....	68
Total.....	748	3,391	553	4,692

At Hanover, Germany, I found a comparatively new and beautifully arranged veterinary school in its group of botanical gardens. It was under construction from 1895 to 1899, and I was informed that its cost amounted to 4,000,000 marks (\$1,000,000). About twenty buildings are included in these grounds and it indeed surpasses in beauty and extent some of the smaller universities in the United States.

The entrance requirements, as I understood it, are the same throughout Germany. A student must have passed through a gymnasium (about 9 years), which corresponds to a High School education and that which precedes it in the States.

The length of the veterinary course is seven semesters of about five months each, or a total of three and a half years. The tuition per year at Hanover is 160 marks (\$40). An eighth semester is devoted to final examinations for those who are eligible and able to complete the course. For this semester no tuition is charged.



FIG. 4.—INSTITUTE OF PHYSIOLOGY AND CHEMISTRY (REAR), VETERINARY SCHOOL, HANOVER.

The medical and surgical clinics under Professors Malkmus and Frick, respectively, and the clinic for small animals under Professor Künneman, are well patronized. The students do not operate upon patients, but study them, dress wounds and keep records of their progress. Subjects are purchased for the students to operate upon and these are then utilized for dissection. In the clinic there is no charge made for consultation. Medicines.

are furnished at about 25 per cent. below the usual rates. A payment of 2 marks (50 cents) per day covers everything in the surgical clinic.

There are about 240 students in attendance at the Hanover school. Military service is compulsory in Germany and veterinarians are not exempt from it. Because of their higher education, and this applies to medical and university students also, only one year is required instead of two years as for ordinary individuals. A student must serve out his military term before he can embark in private practice. I was informed that the government would pay the expenses (not personal) of a student at a veterinary school and in return would require him to serve from seven to ten years as an army veterinarian—at least one year for each semester.

The veterinary school at Berlin leads all the other in the number of students, there being 335 in attendance. Berlin, I was informed, is a military school and the students attending there are preparing for service as army veterinarians. The grounds of the Berlin school are about as extensive as those of Hanover and there are numerous new and modern buildings. Some of the older buildings are to be replaced by new ones in the near future. A number of the professors live in a building situated upon the grounds. This is true to a much less extent of the majority of the schools visited in Germany—either a professor or some of the assistants being furnished with quarters.

In addition to the medical clinic under Professor Fröhner and the surgical under Professor Eberlein and the clinic for small animals under Professor Regenbogen, there is a very large polyclinic under Professor Kärnbach. A great many animals are treated in these clinics.

Professor Zuntz, Director of the Agricultural School, not far from the Veterinary School, but independent of it, has done some important work upon the physiology of the domestic animals.

The tuition is the same as at Hanover, \$40.

It was told as a matter of historical interest, that Virchow as a young student did some work at the Veterinary School, and it was there he discovered the bacillus of malignant oedema. Also that Koch's discovery of the Bacillus of Tuberculosis and the Comma Bacillus occurred in a building situated near the Veterinary grounds.

I am under considerable obligation to Professor Ostertag and his assistant, Dr. Himpel, for courtesies rendered in making it possible for me to attend various lectures and clinics, not only in the Veterinary School, but in the University of Berlin as well.



FIG. 5.—ENTRANCE TO THE BERLIN VETERINARY SCHOOL, STATUE OF GERLACH.

The following data relating to attendance and cases presented at the clinics at Berlin was taken from the *Veterinary Journal* for September, 1907, and relates to the year 1905-6:

“During the summer session 400, and during the winter 416 students were on the roll of the school, and 21 military students. One hundred and ten presented themselves for the final examination, of whom 97 passed.

" One thousand seven hundred and twenty-seven horses and 1 donkey were treated in the medical wards under Professor Fröhner, and 760 horses in the surgical under Professor Eberlein. Six hundred operations were performed. Six thousand nine hundred and thirteen large animals were attended as out patients under Professor Kärnbach and 1,908 minor operations were performed. In the canine ward, under Professor Regenhagen, 1,260 patients were treated and 244 operations were performed. Eight thousand dogs, 181 cats and 14 monkeys were attended as out patients and 632 minor operations were performed.



FIG. 6.—ENTRANCE TO THE VETERINARY SCHOOL AT MUNICH.

" Post-mortem examinations were made by Professor Schütz on 305 horses 1 donkey, 2 oxen and 113 dogs. Professor Eggeling paid 453 visits and treated 52 horses, 486 oxen, 561 pigs and 3 goats."

The grand total of all the animals treated in the various clinics amounts to 20,017.

The Veterinary School at Dresden, under the directorship of

Professor Ellenberger, is not so extensive as those at Berlin and Hanover, but the buildings are well appointed and conveniently arranged. In a building upon, or adjoining, the grounds reside veterinarians in the military service who take a course of about six months in horse shoeing and the forge under Professor Lungwitz.

The clinics are conducted on a plan similar to that at Berlin, but the charges for the patients are somewhat less. There are about 167 students in attendance. The tuition is 160 marks (\$40) per year, with 10 or 12 marks additional for special purposes.

The Veterinary School at Munich, with Professor Albrecht as director, has buildings somewhat older than the other German schools, but they are well equipped and arranged. The building containing the pathologic collection of Professor Kitt is the most antiquated, but the collection is most interesting. I was informed that Professor Kitt had recently been retired on account of disability.

The tuition charges are only 60 marks (\$15) a year at this school and the clinical charges are also lower than at the other schools. The attendance is about 320.

According to the catalog for 1905-6 the Munich school received the following number of animals in their various clinics:

	Horses.	Ruminants.	Carnivora and Herbivora.	Swine.	Dogs.	Carnivora.	Cats.	Birds.	Birds and other Animals.	Total.
Medical Clinics.....	312	3	..	23	797	..	39	59	..	1,233
Surgical Clinics—Large ani- mals diseased.....	549	22	..	51	..	..	..	..	..	622
(Operated upon).....	(412)	(21)	..	(51)	..	..	..	..	..	..
Surgical Clinics—Small ani- mals diseased.....	..	..	23	..	..	1,032	..	..	32	1,087
(Operated upon).....	..	..	(20)	..	..	(712)	..	..	(20)	..
Polyclinic, Surgical Division..	6	..	..	..	1,831	..	78	..	52	1,967
Polyclinic, Medical Division..	36	..	..	..	2,419	..	148	..	213	2,816
Ambulatory Clinic.....	194	618	..	1,081	..	111	..	..	89	2,093

The Veterinary School at Stuttgart, under the directorship of Professor Siissdorf, has grounds about as extensive as those at Dresden and Munich. Some of the buildings are quite antiquated, but the institute of Anatomy and Pathology and the departments of Medicine and Surgery are well quartered in relatively new and commodious buildings. There is quite an elaborate system for ventilating the hospital wards of both of these



FIG. 7.—ENTRANCE TO THE VETERINARY SCHOOL AT STUTTGART.

departments. The department of surgery, under Professor Hoffman, shows a wonderful range of mechanical ingenuity in the arrangement and manipulation of its apparatus. There is an elaborate operating table regulated by hydraulic pressure. It may be turned to a vertical or horizontal position or tilted to any angle and may be raised or lowered by means of a lever. There is also an elaborate apparatus for confining a horse by means of a system of clamps for the head and neck, the feet being fastened to the floor. A large Roentgen Ray apparatus

is also included in the equipment. The stalls are most conveniently and hygienically arranged for the comfort of the patients. Water is supplied to each stall automatically through a pipe, so that the patient has always a supply before him. There are from 120 to 150 students at this school and the tuition is 140 marks (\$35) per year.

It was a matter of much regret that time did not permit me to visit the Veterinary School at Giessen. I was informed that it had quite a close relationship to the medical department of the University—more so than other schools in Germany.



FIG. 8.—VETERINARY HOSPITAL, ZÜRICH.

In Switzerland, the first school that I visited was at Zürich. Unfortunately, the season for instruction ended at about the time I was there, and I was unable to witness the work and meet as many of the professors during the remainder of the trip as previously.

This school is affiliated with the University of Zürich, although the school buildings are some distance from it. There is no separate director of the school, the president or director of the University officiating as such. A portion of the course,

including botany, zoology, physics, chemistry and physiology, is therefore given at the University. The veterinary faculty is included with that of the University. The school is small, including only 35 students, and the buildings are somewhat old. The entrance requirements for the schools in Switzerland are similar to those in Germany.

There is also compulsory military service in Switzerland. It differs in some interesting ways from that in Germany, so far as veterinarians are concerned. As it was explained to me, the young man, while still a student, must serve in the recruit school,



FIG. 9.—VETERINARY SCHOOL, BERNE.

devoting eight weeks to military service if in the artillery, or twelve weeks if in the cavalry. If he wishes to maintain some connection with the army, he attends the under-officers school (optional) for five weeks for the artillery branch. Then comes the officers' school (also optional) after the state examination, where he spends six weeks. Then he becomes an officer-lieutenant and must serve eight weeks if in the artillery, or twelve weeks if in the cavalry. After the officers' school comes what

is known as the "Wiederholens Kurs" (Repetition), and the lieutenant must serve every second year for three weeks until he is 32 years of age. A lieutenant gets 6 francs, or \$1.20 a day while serving.

The following report of the clinical work at Zürich for 1906 was furnished me during my visit:

	Hospital Clinic.	Ambulatory Clinic.	Consulting Clinic.	Total.
Horses	921	1,089	3,474	5,498
Asses and mules.....	1	..	13	
Cattle.....	38	1,626	76	1,740
Swine.....	2	92	205	299
Goats.....	..	8	3	13
Sheep.....	..	1	..	
Dogs.....	563	163	1,933	2,659
Cats.....	5	12	264	281
Fowls.....	..	47	10	84
Parrots.....	1	1	2	
Other birds.....	1	..	22	14
Rabbits.....	1	..	10	
Guinea pigs.....	..	..	2	
Squirrel.....	..	..	1	

The remaining Swiss Veterinary School is at Berne and is affiliated with the University of that city, although the buildings are separate. This school is larger than the one at Zürich, having 45 students. The grounds are somewhat larger and the buildings are more modern and commodious.

The veterinary faculty is included with the University faculty. The Swiss, like the other schools, have clinical periods during the forenoon. The tuition in both schools is from 200 to 300 francs (\$40 to \$50) per year. The course in both schools is four years long.

Through the kindness of Dr. Liautard, who accompanied me, I obtained a very fair idea of the school at Alfort, Paris, al-

though the work of instruction had ceased. The grounds, with their pleasant groves and numerous buildings, are very extensive and contain statues of Bourgelat and Bouley and a bust of Nocard. A few of the older buildings still remain.

The clinic continues through the vacation and presented a scene of considerable activity at the time of my visit, many of the students remaining to assist. There are between 250 and 300 students in attendance and they take their clinical work during the third and fourth years of their course. The rates

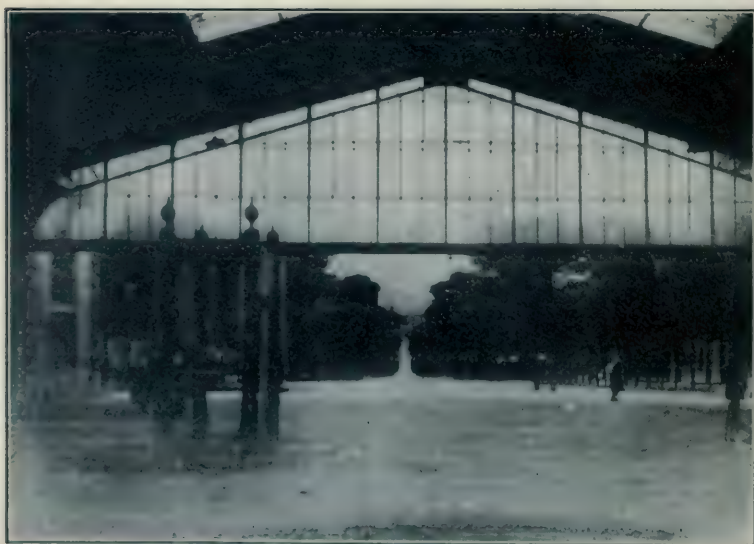


FIG. 10.—CLINICAL AREA, ALFORT, WITH VIEW OF STATUE OF BOURGELAT IN THE DISTANCE.

are very cheap at this school, as I was informed that a student could get his veterinary education and living on the payment of something like 450 francs (\$90) per year. There is a dormitory for the students upon the grounds.

On a second visit to the school, I met a Chinese student, who informed me that his government sent him there and paid his expenses and that when he returned he would be the first veterinarian in China.

I was informed that the Alfort school is supported by the government under the Secretary of Agriculture and gets an annual appropriation of \$175,000.

As in Germany, military service is also compulsory in France, but apparently no allowance is made for the veterinary education, as I was told that the veterinarian must spend two years in the army either as an army veterinarian or common soldier.



FIG. II.—BUILDING FOR CLINICS, BRUSSELS.

The Veterinary School at Brussels, Belgium, under the directorship of Professor De Give, is evidently an old school, and there is a larger proportion of old buildings here, with perhaps the exception of Zürich, than the other schools visited. I was informed that the course in this school is six years in length, the first two years being taken in the University and that such subjects as botany, physics, zoölogy, psychology are taken there, and the remaining four years are spent in the Veterinary School. Or if the four years in the Veterinary School are regarded as the period of professional work, then it may be accepted that the

two years of University work are required for entrance to the Veterinary School.

The tuition is 300 francs (\$60) per year, with an additional charge of 20 to 60 francs (\$4 to \$12) for laboratory fees; there are 150 students in attendance. It is entirely optional whether the student shall go into the army or not, as veterinary military service is not compulsory in Belgium.

One of the facts, I think, which impresses the American visitor to the veterinary schools on the Continent is their extensiveness; the grounds are spacious and there are numerous buildings upon them, a single building for one or two departments, with their laboratories and museums, being larger than the whole equipment in some of the American schools.

Governmental support of schools, as it exists in Germany, is conducive to a high degree of efficiency. Some of the advantages are: Uniformity of entrance requirements; none but well educated and qualified veterinarians are in practice. An illegal practitioner is, I judge, a *rara avis* in that country. With practically the same regulations, the system of instruction is interchangeable and a student may transfer from one college to another without loss of time or credit. In some instances living quarters are given to the teachers in addition to their salaries.

The methods of instruction of the German schools I visited while in session, attending lectures, clinics, etc., are, I understand, typical of the others. According to the schedule some of the work begins at 7 o'clock in the morning and some continues until 6 p. m. In none of the lectures which I attended, although present promptly on the hour, did any of the lecturers begin until from fifteen to twenty-five minutes after the hour had struck. This long delay is customary throughout Germany in other branches as well as the veterinary.

There is not, as I observed it, the paternal interest in the student as in America. The German system of having the chief examinations at the end of the course—apparently on the plan of "pay when you get through"—results in quite a large percentage of students not getting through at the scheduled time.

because of dilatoriness and not keeping up to the mark. This again is a custom which is prevalent in Germany in the universities as well as veterinary schools.

Although the schools are well provided with laboratories, and they are finely equipped, and although they are used for research by assistants or advanced students, the idea was impressed upon me that the laboratory courses for the *undergraduate* students could stand a higher degree of development in such branches, for example, as physiology, pathology and bacteriology.

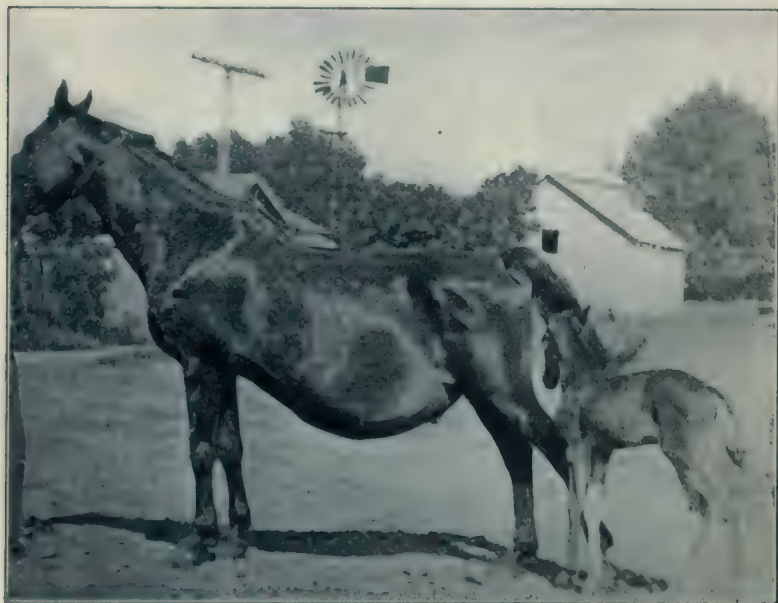
In France, although the government is generous in its appropriation to the Alfort school, the conditions surrounding the veterinarians in practice are not of the most desirable. I was informed that practice in veterinary medicine was practically open to any one who wished to take it up. Veterinarians from other countries may settle in France without let or hindrance, which is no disadvantage if they are properly qualified. But the absence of legal restrictions, except in connection with outbreaks of contagious or infectious diseases, against unqualified persons taking up the practice of veterinary medicine, is a condition which can have no other effect than to retard veterinary progress in that country.

The Veterinary Schools in Holland and Switzerland appear to follow more or less closely the methods of Germany; while the school in Belgium is apparently more like those in France.

The European schools have the prestige of age. The first Veterinary School was founded at Lyons, France, in 1762. Other schools were established soon afterwards; one appeared at Alfort in 1765; others at Copenhagen in 1773; at Dresden in 1774; at Vienna in 1777; at Hanover in 1778; at Budapest in 1786; at Berlin and Munich in 1790; at London and Milan in 1791, and at Madrid in 1793. Although earlier attempts may have occurred, the first successful establishment of a Veterinary School in America was that of the New York College of Veterinary Surgeons, which was chartered in 1857. The Ontario Veterinary College at Toronto, Canada, was established

in 1862 and the American Veterinary College in 1875. Since then others have been established, some of them with State support, but the proportion of the number of Veterinary Schools to that of the general population is still apparently less in America as compared with Europe. Relatively, veterinary science is young in this country and the prestige of years and adequate financial and government support is still to be attained.

UNUSUAL LOCATION OF TEATS AND MAMMARY GLANDS IN MARE.—The accompanying illustration of mother and offspring is furnished the REVIEW by H. Thomson, veterinarian, Newman Grove, Neb. The colt was three weeks old at the time the picture was taken. It is now six months old and mother and colt are in good condition. Notice the location of the teats and



that there is not the slightest sign of mammary glands. In his letter to the Editors, however, Dr. Thomson states that the colt suckles, going between its mother's hind legs to do so. The fact that the colt suckles and that it has been well nourished would indicate that the mammary glands must be developed and that they are functionally active, although abnormally located.

DESCRIPTION OF DISEASES SHOWN AT AMERICAN VETERINARY MEDICAL ASSOCIATION, AT KANSAS CITY, KANSAS, SEPTEMBER 12, 1907.

PREPARED FOR THE REVIEW BY PROF. SESCO STEWART, *Dean of the Kansas
City Veterinary College, Kansas City, Mo.*

1. Generalized tuberculosis in hog showing very extensive lesions in the lungs, liver, spleen and their lymphatic ganglions. Also well-marked lesions on the serous membranes—(Pearl Disease)—both visceral and parietal pleura, peritoneum and omentum.

2. Generalized tuberculosis in hog showing very extensive lesions in the cervical region—both glandular and muscular. Also well-marked lesions in the lungs, liver, spleen, on pleura, visceral and body lymphatic glands.

3. Generalized tuberculosis in hog showing very extensive lesions of all the visceral lymphatic glands, nearly all the body lymphatic glands, lungs, liver, spleen, pleura, kidneys, pancreas and bones.

4. Tuberculosis—a common every-day case—hog condemned on final post-mortem inspection showing calcified lesions of the cervical, bronchial, hepatic, and superficial inguinal lymphatic glands.

5. Tuberculosis—hind-quarters of hog—showing lesions in the hock joint and sublumar lymphatic glands. Also spleen from same hog.

6. Tuberculosis—fore quarter of hog—showing lesions in the elbow joint.

7. Tuberculosis—loin and ribs of hog—showing lesions on the pleura, in the bones and sublumar lymphatic glands.

8. Tuberculosis—loin of hog—showing lesions in the sublumar lymph glands, with liver and spleen from same hog.

9. Tuberculosis—lungs and liver of hog—showing extensive caseous encapsulated lesions in the lungs, with caseous calcareous lesions in the bronchial and mediastinal lymphatic glands. Also lesions in liver and hepatic lymphatic glands.

10. Tuberculosis—lungs, liver and spleen of hog—showing miliary tuberculosis of lungs and liver, with well-marked tubercles in spleen.

11. Tuberculosis—liver with stomach attached, spleen and kidneys from same hog, showing well-marked lesions of tuberculosis.

12. *a.* Hog heads showing a series of tuberculosis lesions.

b. Hog heads showing the congested lymph glands from a case of hog cholera.

c. Hog heads showing abscess formation in submaxillary lymph glands.

13. Hog cholera showing extensive and progressive lesions on the skin, bones, glands, bloody urine, inspissated bile, with a hepatization of the lungs—possibly a mixed infection of the swine plague.

14. Swine plague showing diffuse skin lesions, large, soft and black spleen, congestion of the kidneys, with an acute hepatization of the lungs and a slight pleurisy.

15. Hog cholera; very extensive and progressive circumscribed lesions on the skin; petechia in kidneys, leaf lard, lesions of spleen and liver; petechia heart muscle; ulceration and acute inflammation in large intestines.

16. Swine plagues; diffust skin lesions, well marked icterus, large, soft and black spleen, congestion of the liver and kidneys, with acute red hepatization of the lungs.

17. Pyemia showing very extensive abscesses on the carcass, with multiple metastatic abscesses in the lungs, liver and intestines.

18. *a.* Pyemia showing abscess formation of the bones, lungs, liver, spleen and small intestines.

b. Hog showing hepatogenous icterus.

19. Hog condemned for chronic peritonitis and pleurisy, both vescceral and parietal lesions.

20. Hog showing muliple fatty necrosis extensive and well-marked lesions in carcass and viscera.

21. Two shoulders showing specimens of the cysticercus celulosæ—the pork measles bladder worm—larval stage of the tape worm in man—*tænia solium*.

22. Livers showing hydatids or echinococcus disease in the hog—larval state of the tape worm of the dog—*tænia echinococcus*.

23. Loin of a hog showing location and lesions produced by the *stephanurus dentata*.

24. *a.* Liver from hog showing chronic intestinal hepatitis, with scar tissue formation due to parasitic irritation.

b. Loop of intestine showing the tubercles produced by the parasite, *echinorhynchus gigas*, lesions yellowish in color and may be mistaken for tuberculous patches.

c. Loop of intestine inverted showing parasite and its attachment to the mucous membranes, with its armed trunk, causing irritation and tubercle formation.

25. *A series of skin diseases of the hog:*

a. Integument showing acute erythematous conditions.

b. Integument showing dark spotted pigmentations.

c. Integument showing dark diffuse pigmentation.

d. Integument showing acute erythema, due to traumatisms.

e. Integument showing papillomata.

f. Integument showing follicular mange, produced by the *demodex folliculorum*.

g. Integument showing acute circumscribed hemorrhagic spots, from a case of hog cholera.

h. Integument showing normal conditions.

-
26. *A series of lung lesions of the hog:*
- a. Lungs showing tuberculosis.
 - b. Lungs showing abscess formation with chronic pneumonia.
 - c. Lungs showing a well-marked congestion.
 - d. Lungs showing acute hepatization.
 - e. Lungs showing gray hepatization with approaching resolution.
 - f. Lungs showing catarrhal pneumonia.
 - g. Lungs showing normal conditions.
 - h. Lungs and heart showing chronic pericarditis.
27. *A series of pleural lesions of the hog:*
- a. Pleura showing tuberculosis.
 - b. Pleura showing acute pleurisy.
 - c. Pleura showing chronic pleurisy with well-marked exudation present.
 - d. Pleura showing parietal and visceral adhesions.
 - e. Pleura showing normal conditions.
28. *A series of peritoneal lesions of the hog:*
- a. Peritoneum showing chronic peritonitis.
 - b. Peritoneum showing acute peritonitis.
 - c. Peritoneum showing multiple abscesses.
 - d. Peritoneum showing adhesions.
 - e. Peritoneum showing normal conditions.
29. *A series of liver lesions of the hog:*
- a. Liver showing interstitial chronic hepatitis.
 - b. Liver showing multiple abscesses.
 - c. Liver showing yellow pigmentations.
 - d. Liver showing fatty degeneration.
 - e. Liver showing tuberculosis.
 - f. Liver showing hydatid disease.
 - g. Liver showing normal conditions.
30. *A series of spleen lesions of the hog:*
- a. Spleen showing tuberculosis.
 - b. Spleen showing multiple abscesses.

- c. Spleen showing the large, soft and black condition from a case of swine plague.
- d. Spleen showing atrophy.
- e. Spleen showing normal conditions.
- 31. *A series of kidney lesions of the hog:*
 - a. Kidneys showing tuberculosis.
 - b. Kidneys showing fatty degeneration.
 - c. Kidneys showing yellow pigmentation from a case of icterus.
 - d. Kidneys showing petechia.
 - e. Kidneys showing hyperemia.
 - f. Kidneys showing cystic conditions.
 - g. Kidneys showing the location of the stephanurus dentata in its capsule.
 - h. Kidneys showing normal conditions.
- 32. *A series of pancreas lesions of the hog:*
 - a. Pancreas showing necrosis of the adipose tissue.
 - b. Pancreas showing tuberculosis.
 - c. Pancreas showing normal conditions.
- 33. *Intestinal diseases from hog:*
 - a. Large intestines from hog showing acute inflammation.
 - b. Small intestines from hog showing tuberculosis in the mesenteric lymph glands, also the presence of the echinorynchus gigas in the intestinal loop.
 - c. Small intestines from hog showing mesenteric emphysema.
 - d. Loop of small intestines showing the presence of intestinal worms.
 - e. A portion of small intestines with mesentery showing normal condition.
 - f. Stomach showing acute gastritis.
 - g. Stomach showing normal condition.
- 34. Leaf lard and omentum showing adipose tissue necrosis.
- 35. Hind-quarter of hog—showing melanosis—lesions in mammary glands with tumor on belly.

36. *Three specimens showing diaphragmatic hernia in hog:*
 - a. One lobe of liver and part of omentum in the thoracic cavity.
 - b. One lobe of liver in thoracic cavity.
 - c. Omentum in thoracic cavity.
37. Liver of hog showing concretions in parenchymatous tissues, and in the bile ducts.
38. Small intestines of hog showing faulty development or arrested development of the mesentery.
39. Extra uterine pregnancy—sow—showing a fœtus which was developed in the abdominal cavity, enclosed in the omentum.
40. Head of a calf—a well marked case of hydrocephalus.
41. Aegagropilæ—a collection of hair balls found in the rumen and reticulum of cattle.
42. Large abscesses from region of neck of a cow, lesions show well-defined walls with a peculiar organized condition of its contents.
43. Diaphragmatic hernia in steer showing a portion of the liver and peritoneum in the thoracic cavity with adhesion of lungs.
44. Ovaries from a cow showing multiple cysts.
45. Ovaries from a sow showing multiple cysts.
46. Supernumerary digits in the hog.
47. Specimen from a hog showing dilatations of the rectum, imperforation of the anus and the rectum communicating with the vagina.
48. A portion of the reticulum from a cow showing the presence of foreign bodies; one nail caught in the folds of the mucous lining, and another has perforated its walls, causing a chronic irritation with abscess formation.
50. Two hind-quarters showing extensive necrosis and atrophy of muscular tissues, from a hog that was paralyzed behind.
51. Specimen from a hog showing extensive bruises of muscular tissues in region of the flank.

52. Abscess—steer—sublumbar region, on right side with liver adhesions, the lesions show well-encapsulated walls of the abscess.

53. Abscess formation in mammary glands of the hog.

54. Abscess formation from scrotal region of the hog.

55. Mammary gland of cow showing lesions of tuberculosis.

56. Two kidneys from a hog—pathological alterations—lymphosarcoma.

57. Two kidneys from a hog, the right kidney and adenocarcinoma weighing 13 pounds the left kidney normal in size, weighing 3½ pounds.

58. Bovine spleen showing a large hæmatoma weighing 12½ pounds.

59. Bovine carcass showing 22 sarcomatous neoformations of the mixed cell variety.

60. Large fibroma taken from the flank region of a cow, weight 20 pounds.

61. Lymphosarcoma taken from the sublumbar region of a steer.

62. Cystic kidney taken from a hog, weight 20 pounds.

63. Generalized tuberculosis—cow tagged with the U. S. Suspect Tag, on ante-mortem inspection showing a well-marked enlargement of the cervical region, and on post-mortem inspection showing extensive lesions in submaxillary and retropharyngeal lymphatic glands, a large abscess posterior to pharynx, extensive and progressive lesions in the lungs, pericardium and pleura, bronchial and mediastinal lymph glands, liver and mesenteric lymph glands, and peritoneum, carcass emaciated and anemic.

64. Bovine pleura and peritoneum showing very extensive tubercular lesions on pleura, also in the lungs and lymphatic glands from the same animal.

65. Bovine pleura and peritoneum showing slight lesions of tuberculosis on the pleura and peritoneum. There was no infection of the shoulder muscles with integument from the same

region. Lesions in the prescapular lymph glands, also extensive lesions in lungs, bronchial and mediastinal lymph glands, liver and mesenteric lymph glands.

66. Liver from a generalized case of tuberculosis in a bull showing very extensive and caseous lesions with a general hypertrophy of the liver, which weighed 63 pounds.

67. Bovine liver from a healthy bull, weight 12 pounds.

68. Bovine shoulder—from a generalized case of tuberculosis—showing very extensive caseous lesions of the prescapular lymph glands.

69. Bovine heads showing a series of tubercular lesions, both caseous and calcified. °

70. Bovine lungs showing extensive and progressive lesions of tuberculosis.

71. Lungs from a Texas steer showing very slight calcified tubercular lesions in the bronchial and mediastinal lymph glands, with slight foci of infection in the right lung.

72. Pleura and peritoneum from a young fat cow showing very extensive tubercular lesions (Pearl Disease).

73. Peritoneum and lungs from a large native steer showing acute tubercular lesions in the lungs and their lymph glands with acute peritonitis.

74. Bovine uterus—from a generalized case of tuberculosis—showing an infection of the ovaries and uterus.

75. Bovine mammary glands—from a case of generalized tuberculosis—showing well-marked lesions of tuberculosis in the organ and its corresponding lymphatic glands.

76. Bovine small intestines showing tuberculosis in chain of the mesentery lymph glands.

77. *A series of lesions in bovine lungs:*

a. Lungs showing tuberculosis.

b. Lungs showing actinomycosis.

c. Lungs showing chronic pneumonia.

d. Lungs showing a localized abscess.

e. Lungs showing melanosis.

f. Lungs showing adhesion to diaphragm.

g. Lungs with heart showing pericarditis with adhesions.

78. *A series of lesions in bovine livers:*

- a. Liver showing spotted capillary angiomatosis.
- b. Liver showing atrophic cirrhosis.
- c. Liver showing hypertrophic cirrhosis.
- d. Liver showing biliary calculus in gall bladder.
- e. Liver showing parenchymatous hepatitis.
- f. Liver showing well-marked peritoneal adhesion.
- g. Liver showing multiple abscesses.
- h. Liver showing an accessory lobe.
- i. Liver showing yellow pigmentation, from a case of hepatogenous icterus.
- j. Liver showing coccidiosis.
- k. Liver showing tuberculosis.
- l. Liver showing infestation of the distoma hepaticum, liver somewhat hypertrophied, the biliary canals very much enlarged and calcification of their walls.
- m. Liver showing the location of flukes in the parenchymatous tissues, also the lacunar chambered spaces full of a clammy, bloody, viscous liquid, in which the flukes are found.

79. A series of bovine heads showing different lesions of actinomycosis.

80. Bovine tongues affected with actinomycosis—the pathological alterations known as wooden tongue.

81. Two bovine heads showing foreign objects imbedded between the teeth and muscles.

82. Bovine œsophagus showing threadworm, *Filaria scutata bovis*.

83. Bovine œsophagus showing the larva of the œstrus bovis.

84. Bovine small intestines showing subcutaneous nematode tubercles caused by the larvæ of the anchylostomum bovis. These nematode tubercles are very common and very frequently found in bovine intestines.

85. Bovine small intestines showing ossification of the mesentery.
86. Calf kidney, pathological alteration, sarcomata.
87. Bovine caul showing fatty necrosis.
88. Bovine pleura showing acute circumscribed pleurisy—traumatic.
89. Bovine pleura showing chronic pleurisy with well-marked exudations.
90. Bovine pleura showing lesions of tuberculosis.
91. Bovine pleura showing acute circumscribed traumatic pleuritis with fracture of ribs.
92. Bovine peritoneum showing chronic peritonitis with well-marked exudations.
93. Bovine peritoneum showing multiple abscesses.
94. Bovine peritoneum showing lesions of tuberculosis.
95. A portion of a bovine carcass showing very extensive bruises.
96. Bovine shoulder showing bruises with gangrenous condition.
97. An acute state of Texas fever in a calf showing the intense icteric condition of the carcass: large, soft, black, friable spleen; bloody urine; the liver showing a yellowish hue and gall bladder containing a viscid inspissated bile.
98. Integument from scrotal region of a Southern steer showing the cattle tick—the *boophilus annulatus*—the carrier of Texas fever.
99. Spleen of an acute case of Texas fever in a calf.
100. Spleen from a healthy calf.
101. Bovine spleen of an acute case of Texas fever.
102. Spleen from a healthy steer.

Parasites Displayed.

103. The common liver fluke—*distoma hepaticum*.
104. The large American fluke—*distoma mangum*.
105. *Filaria cervina*, found in the abdominal cavity of domestic cattle.

106. *Stephanurus dentata*, a common parasite in swine.
107. *Ascaris lumbricoides suilla*, common intestinal worm of the hog.
108. *Echinorynchus gigas*, intestinal worm of the hog—armed but not segmented.
109. *Tænia expansa*, common tape worm of cattle.
110. *Strongylus contortus*, found in the abomasum of sheep and goats, in lambs and yearling sheep.

Diseases Found in Sheep.

111. Lungs—sheep—showing caseous lymphadenitis.
112. Liver—sheep—showing large caseous abscesses.
113. Abomasum—sheep—showing the location of the *strongylus contortus*.
114. Lamb showing emaciation and anemia, caused by infestation of the *strongylus contortus*.
115. Intestines of sheep showing nodular disease. Lesions produced by *œsophagostoma columbianum*.
116. Sheep showing extreme emaciation.
117. Sheep showing icterus and hernia.

VETERINARIAN W. E. A. WYMAN is devoting his entire time to the meat and milk inspection of the city of Covington, Ky.

PRESIDENT ROOSEVELT in his recent message to Congress, referring to the new meat inspection law, declares that "two years have not elapsed, and already it has become evident that the great benefit the law confers upon the public is accompanied by an equal benefit to the reputable packing establishment."

SECRETARY LYMAN AT KANSAS CITY.—The Kansas City Veterinary College is not content with its increased facilities for teaching veterinary science to its 460 students, but is strengthening its able faculty by the addition of more talent. Richard P. Lyman, B. S., M. D. V. (Harvard), Secretary of the American Veterinary Medical Association, has responded to a call from the Kansas City Veterinary College to lecture on the "Practice of Medicine and Principle of Surgery" in that progressive institution.

THE PREPARATORY EDUCATION OF VETERINARY STUDENTS.

ADDRESS OF PROF. W. L. WILLIAMS, V. S.,

Before the Association of Veterinary Faculties and Examining Boards of North America,
at Kansas City, September 9, 1907.

In estimating the strength of a veterinarian or member of other profession our attention is directed prominently to three important factors:

1. His personality; his mental capacity, character, integrity, vigor, prudence, enthusiasm.
2. His academic or preparatory education.
3. His scientific or professional attainments.

Some emphasize one of these, others believe another the most important, but in our dealing with the second we shall draw no comparisons with the other two and shall regard each of the three as alike essential to efficiency.

The preliminary training of the student has from the first constituted a complex problem in American veterinary education and no substantial agreement has yet been reached in either theory or practice. In a majority of American veterinary colleges the matriculation requirements are elastic and evasive and any definite entrance demands are darkly veiled beneath a "Common School Education," which may be made to mean anything or nothing as the interested parties may elect. Neither are we to hope for any accord in this direction until we reach a common ground also in reference to character and professional training.

If we are to admit to our veterinary colleges the dissolute and dishonest, the mountebank and charlatan with the same freedom or satisfaction that we do the highest type of young men; if after admitting students to college classes we offer a course of instruction which fails to enable them to secure an efficient professional training, then high matriculation requirements are in part or wholly wasted.

Hence in discussing the problem of preliminary education the other two factors suggested need be kept in view, since all three must be kept in harmony.

The aims of preparatory education for a profession may be expressed in two ideas which, followed closely, ultimately converge and become essentially identical. On the one hand it is held that the academic education demanded for entrance into a veterinary college should have for its chief or sole aim an enabling function through which the student shall be prepared to understand and profitably pursue the professional subjects, while others value academic training chiefly for the culture and refinement it affords and by which the veterinarian is largely enabled to assume higher social rank in his community. The two thoughts need not be antagonistic. An education which will enable a man to pursue an advanced course in veterinary science with the greatest profit also fits him to assume a position in his community as an educated gentleman; any course which insures to the student a liberal education at the same time contributes to his ability to acquire sound professional training, but when not designed intelligently to that end may not have the same practical value in a technical education.

The matriculation requirements of American veterinary schools are as variable as their courses of study, character of equipment or faculty.

The extremes may well be illustrated by the Ontario Veterinary College which for many years demanded for entrance an examination in "Reading and Writing" and the neighboring colleges in the State of New York, which, under a State law, demand four years of satisfactory high school work. Between these two technical extremes every possible variation occurs, both in theory and practice.

While the two requirements cited appear very wide apart the actual difference depends largely upon the interpretation of the terms. Reading and writing are very indefinite terms and the rule can be applied with greater elasticity. A five-year-old child who

reads from a primer "The dog runs" and can express it in characters which may be interpreted, may be said to be able to read and write and has proven his claim by reading and writing. At the opposite extreme the rule could be so interpreted so as to comprise a thorough knowledge of the English language, ability to read and properly understand its highest and best literature and to write it readily, correctly and fluently. Such an interpretation would surpass in some very important respects the apparently much higher requirements of New York.

Veterinary colleges in the State of New York may admit students upon Veterinary Students' Certificates issued by the Regents or State Education Department, but these are not mandatory and the college may make further demands upon the student before registering him, although in practice they are admitted without further question in reference to preparatory education. In one, if not both of the New York schools, the universities of which they each form a part have a very excellent rule by which any student who is markedly deficient in English may be excluded, which has not yet been too drastically applied to matriculants in the veterinary colleges.

The quantity and quality of preliminary education to be demanded needs to be based primarily upon our interpretation of veterinary science. Two distinct and divergent views of veterinary practice are held in America; one group maintains that it is a profession, the other that it is a trade. Each party is correct; some practitioners belong to the one, some to the other. He who intelligently, earnestly and efficiently studies veterinary science in college and in practice, and renders proper service to the live-stock owners and the community, belongs to a highly honorable and honored profession; he who memorizes a few empirical rules by which certain symptoms demand the application of given remedies and authorizes the collection of fees it becomes a trade or avocation, and a very poor one at that. In discussing our subject we shall aim to confine ourselves to the student who hopes to become a part of an honorable profession, and to the

college which aims to have its graduates shun the veterinary trade and enter the *profession*.

Language constitutes the chief means for communication between man and man, and teaching is accomplished almost wholly through its agency, whether it be in class room, laboratory or clinic. If the student would profit by a lecture he needs understand the language of the teacher and to be able to place some of the thoughts in a permanent form upon paper; if he would learn from a text-book, if he would learn from a library, he must understand the language of his author. When the student has learned his text or received other instruction, he must employ language as the chief means of expressing the knowledge which he has acquired, and it is through this expression of thought in language that the teacher must chiefly judge the work of the student and later constitutes our best basis of measuring the practitioner. The first and greatest essential in preparatory education is that of language, of that language in which the study is to be prosecuted. With the exception of Laval University and its alumni, English is the language of American veterinary education and practice, and should take precedence over any or all other preparatory studies. Education consists chiefly of an acquisition of the knowledge and thought of others, verified and elaborated by personal experience and observation. The student needs have such preliminary training that he may clearly comprehend the teachings of writers and lecturers; if these are to be of a high order then his command of language must be of corresponding efficiency.

It is not easy to apply a fixed standard of measurement to acquirements in language. Two, three or four years of English in a high school insures the contact of the student with representative English literature by the best authors, but cannot assure us he has learned the language. Inferentially some knowledge of English has been acquired, else the student fails to pass the required examinations in this and other subjects, but frequently it is with a low mark, which signifies a poor command of language. Only a small minority of American veterinary colleges

emphasize English as among the requirements for entrance, but others apparently demand it by implication. The New York law makes no specific demands upon this point, but as a matter of practice high school graduates include among their studies more or less extended study of the English language and literature, and even in the technical absence of this the pursuit of other branches necessarily involves the use of the language and some degrees of proficiency is assumed to follow as a logical sequence.

Veterinary science is a world science and veterinary knowledge is recorded in many languages. The most and best veterinary literature emanates from Continental Europe, where the governments have long supported veterinary education liberally and consistently for its value to the nation. A very large and important part of our standard English veterinary literature is translated, extracted, borrowed or otherwise obtained from European authors, and yet only a small part of this finds its way into our language after important delays or through imperfect translation. The volume of meritorious veterinary literature in the German, French, Italian and Scandinavian languages is so great that the successful veterinary student needs have command of one or more of these, especially of German or French, and we consider the college or teacher having the professional success of the student at heart should at least point out to him the great importance of a preparatory working knowledge of one or more of these before entering upon his veterinary study. In addition to the command of language which we consider so essential as a preparation for the study of veterinary science, there are other subjects of a preliminary character which need be mastered before the student can properly comprehend the purely professional subjects. Veterinary study and practice frequently comes into close relations with the natural sciences.

An elementary knowledge of physics is essential to a clear conception of anatomy, physiology and in many ways in the mechanical handling of disease.

Botany has a wide interest in the study of animal foods, of organic drugs and of poisonous plants, and a majority of the in-

fectious diseases are due to the growth of vegetable organisms within the tissues of the animal body.

Zoology includes within its field the domestic animals themselves, their organization, habitat, food methods of feeding, the changes wrought in them by food or other conditions. It embraces a long list of animal parasites of that higher group known as entozoa and epizoa, those parasites which in addition to their direct injuries also act as the bearers of other smaller parasites like the trypanosomes by the mosquitoes, and finally the protozoan group of disease-producing organisms.

Chemistry holds an important place in the preliminary education of the veterinarian. Elementary chemistry is essential to a due conception of the composition of foods, medicines, poisons and of the secretions and excretions of the animal body.

We have mentioned briefly those studies which seem directly essential as a basis for the advantageous study of veterinary science; the languages supply the means for the interchange of ideas, the sciences constitute the foundation for veterinary education.

In addition to the studies suggested many others could be added with great benefit by affording a liberal education. The A. V. M. A. has placed its seal of approval upon the excellent preparatory work accomplished by the agricultural schools and recognizes graduation from these as entitling the student to an allowance of one year in the veterinary college course and in practice the veterinary colleges are always anxious to admit these men on as liberal terms as possible, finding them pre-eminent in their veterinary classes.

Such preliminary education as we have outlined fulfills alike the needs for efficiently studying veterinary science and the recognition of the veterinarian as an educated gentleman. It is essential that the latter object be kept constantly in view, since our profession cannot make the desired advances until the social position of the veterinarian is recognized as secure and honorable. Young men of refinement and education cannot be expected to enter the profession in large numbers unless they can be

assured, as they can, that they will be admitted cordially into just as good society as veterinarians as they would be in any other profession or calling. College degrees cannot give a man social position, else it would be easily acquired through high sounding veterinary degrees so liberally bestowed. Legal enactment cannot secure social prestige, else some of our State veterinary laws would work wonderful effects upon certain of the veterinary practitioners. The A. V. M. A. has attempted to secure recognition and rank for the veterinarian in the United States Army, but has failed largely because it was attempted by legal enactment to make an uneducated man the social and official equal of an educated one. The standing of a veterinarian in his community depends not upon his college degree nor upon legal enactments supposedly in his favor, but upon his personal character, preliminary and professional training.

The completion of such a preliminary education as outlined would require three or four years of diligent high school work and would thus prolong the time necessary for the procuring of a veterinary degree. The time is not serious, however, in normal cases where the student attends school regularly, since he may accomplish his four years of high school work at sixteen years and still allow five years for professional study ere he attains his majority. A boy with good mental capacity and an earnest worker can finish his high school course, followed by a four years' course in arts or agriculture and finish his veterinary course with an allowance of one year by the time he has reached the age of 22, surely young enough to commence his career as a veterinary practitioner.

The New York law, requiring four years of successful high school work, which technically stands in the front rank among the veterinary schools of America, is deficient in quality and kind. It places too high a value upon quantity rather than quality. Latin or Greek count for as much as German or French; higher algebra or geometry for as much as chemistry or zoology. In so far as they relate to a liberal education, they are no doubt

just as valuable, nor would we argue that they are not even better, but for our specific purposes we consider them distinctly inferior.

Quality counts for naught except to pass, regardless of the duration of time required. A man may take each subject two or more times successively before he finally passes with marks barely sufficient to pass, but finally when he succeeds, he is just as eligible for entrance to a veterinary college as the brightest and best of the school. If a man is studying English and barely passes for four successive years he is probably a far poorer English scholar from the standpoint of efficiency than he has who has passed one year with high honors, yet the man with four years' credit has four times the entrance credits that his superior fellow student possesses and each of these credits counts for as much with low marks as with high. It is a difficult objection to overcome, which is analogous to the student in the veterinary college who requires one or two extra years to limp through the veterinary college, his first year subjects forgotten before the last ones have been reached, yet he holds his place and drags himself through college to later continue to drag along through the world. We believe that a great advance could be made in the requirements of all those colleges demanding more or less high school education by stipulating that certain specified branches be included and that an allowance be made for quality. We would have English more highly valued for admission than Greek, and would regard a mark of 95 in one year of English worth as much as a bare pass in two years in the same subject.

Various objections are raised to the demanding of such preliminary education as suggested. It is claimed that the social position and the emoluments of veterinary practice in America do not warrant the expense, time and labor. Here and there we have enough of such veterinarians to disprove the claim. If any individual veterinarian is singled out for comparison it will be found that his standing is quite as good in his community as though he were a member of other profession or vocation. In European countries where the preliminary requirements for the

study of veterinary science are high, the members of the profession stand correspondingly high in their respective communities, in practice, in civil and military service.

The American veterinarian comes more and more in contact with broadly educated men. The enormous development of agricultural education has resulted in a large proportion of the leading farmers and stock breeders taking degrees from agricultural colleges, preceded by graduation from a high school; the leading merchants and business men who own animals, if not university graduates, are at least liberally educated. The veterinarian cannot meet these upon equal terms except with approximately equal education.

Invasion of fields logically belonging to the veterinarian are now and then threatened by the agriculturist because of his higher and better education, consisting of four years each of high school and college or university work. We have been told that in some States the authorities prefer, for tuberculin testing, and hence for the control of bovine tuberculosis, the agriculturist to the veterinarian, simply because of his more thorough scientific training.

The veterinary service in America is everywhere defective and fragmentary. In the cities there are rules for the handling of corns and quittor probably a trifle in advance of half a century ago, but among fresh horses from the Western farms, exposed during shipment and disposal to a number of deadly contagious maladies, there is virtually no plan for control, and the losses from this one group of affections costs the American people millions annually; each year enough to far more than pay the total equipment and cost of maintenance of all our colleges put together, and they will never be controlled until we have a more efficiently educated body of veterinarians. Conditions in the country are quite as bad, if not worse. A case of dystokia or retained after-birth is handled approximately as it was by the cow leech of a century ago, infectious abortion is almost not handled at all, and sterility is treated by mysterious impregnation

concoctions dispensed by veterinarians whose education consists wholly of a big degree. Over the whole field of veterinary practice only a part of the cases are handled at all, and there is scarcely an area which would not to-day afford abundant room for the addition of an equal number of veterinarians without affecting the practice of those already occupying the field. But the men for this task must be of a higher type than those now existing and must be prepared to take up the work now left undone by existing veterinarians.

It is objected that men so highly educated as those we have suggested will not enter the filthy cow stable or pig-stye to accomplish the needed work, and that for such duty it is necessary to have a more ignorant man, who will blend with the filth. On the face of it the objection is untrue. If you would consult the literature upon the diseases under these filthy surroundings you must turn to the writings, based upon the experiences, of highly educated men. True, the ignorant and dirty practitioner goes into these places, but we have no record of improvement as a result of it, the pig-stye or cow-shed is none the cleaner for it, and he so blends with the filth that his presence passes unnoted. The educated and efficient veterinarian enters the filthy places a clean person and emerges clean; he preserves his identity and dignity, he dispels the filth and replaces it with cleanliness, he modifies conditions, he produces results.

In a recent conversation with a graduate of a leading school he complained that the maximum fee he could command for removing a putrid after-birth from a cow was \$1.50, because a competent cow doctor did it that price. Questioning revealed the fact that they did the same kind of work. They went dirty into the filthy cow stable, wore dirty clothes for the operation, found the cow dirty, left her dirtier than when they came away, were no cleaner themselves for their experience and relied upon the antagonism between various forms of bacteria for disinfection. This is the type of veterinarian to which the argument of a poorly educated man for dirty work leads. The opinion was promptly

and frankly expressed that he was receiving as high fees as his services warranted and suggested that for better remuneration there should be exhibited a higher sense of cleanliness, of education and of culture, in harmony with his college teaching. Later advices indicate that the suggestion is being carried out with satisfactory results.

It has been further objected that a demand for such preparatory education would exclude many highly meritorious young men from the profession. Education of every grade, including veterinary science, is free in America, and there has not recently been a time when any healthy, intelligent young man could not acquire such learning as he desired. We have not known a young man who failed to get an education because of financial want. In every high school, college and university in the country there are plenty of young men and women who are earning their way and securing a good education.

It may be said with justice that the veterinary colleges themselves are not at this time fully prepared to give an education in harmony with the preparation outlined, but they will probably be able to adjust their work as rapidly as the preparatory requirements can be advanced.

If we search amongst the alumni of the various colleges it will be quite uniformly found that the most honorable and conspicuous positions are held by those who possess a liberal education.

If our current veterinary literature is examined it will be almost universally found that the meritorious articles emanate from those men who possess a good academic education.

Less than 50 per cent. of American veterinarians subscribe for any veterinary periodical, they purchase no new books, they attend no veterinary association meetings, they read nothing, they write nothing, they are *in* the profession, not of the profession. Almost without exception they are the men without academic education; they do not have it because they are either too lazy or too dull. Yet the colleges and the profession is responsible for them.

It is charged that those colleges demanding high entrance requirements are not well patronized by students and the charge is all too true, but the explanation does not lie in that alone or chiefly. High entrance demands are confined to State colleges or to those where the State has enacted laws making such requirements mandatory. The majority of these colleges have faculties greatly limited in numbers, handicapped by a want of practical experience, the buildings and equipments have generally been defective, their command of clinical material limited. Yet they are accomplishing a work destined to elevate and make better the veterinary profession, and as soon as the States conducting these institutions extend to them ample support, so that their college work may be made as good as their entrance requirements, the criticism will cease to have whatever weight it now possesses.

From the standpoint of the student all observation and recorded experience indicates that it is to his advantage that he acquire a liberal academic education before entering the veterinary or any other profession. If unfit to complete with credit a high school course, he is incapable of taking an honored place in veterinary practice. We speak of ours as a "learned" profession, but it cannot be so unless its members are educated. Admittedly a high academic education alone does not insure a successful veterinary career, nor does character or professional education. As stated at the outset, the candidate needs the three in ample degree. We observe technically highly educated veterinarians who are failures for want of character or good common sense. On the other hand, it is claimed that men have succeeded as veterinarians who have had very poor academic preparation. But if those men are carefully studied it will be found that they have an equivalent knowledge which we should always accept. If the daily life of a man places him in constant contact with educated people, if he habitually reads good literature, observes and studies everything about him, he acquires a liberal education even though his school attendance may have been insignificant, and the fact that he has so acquired it, has become self-educated, is an indication of inherent vigor and power in him. It is the

same with the course in a veterinary college; the worst diploma mill may occasionally turn out a man of force and efficiency, but the college did not make him; it merely failed to keep him from making himself. Schools, colleges and universities are not maintained because they are the only avenue by which men may get an education, but that they are by far the most efficient, prompt and economical. In reality the successful veterinarians are very largely self-made, viewed either academically or professionally.

We hold that the colleges owe the public more efficiently educated men. In some callings a man learns his work through direct experience, but in doing so spoils little, if any, material and merely accomplishes a small amount of work as an apprentice. When a man is graduated in veterinary medicine he should be prepared at once to do efficient service, but our practice has been to give the student some of the so-called fundamental principles and then turn him loose to learn the practical part at the pain of his patients and expense of their owners. One of the chief means for overcoming this defect is by securing higher preparatory education, in order to enable him to better grasp his professional studies.

Opinion may vary and surroundings may change the advisability as to where and how this preparatory education should be obtained. The New York law permits students to enter with conditions provided they are passed off before the beginning of the second collegiate year. The plan has advantages and disadvantages. It offers advantages to mature and capable men who fall but little short of the requirements and can make them up without serious hindrance to the efficiency of their work during their first year. If we regard preparatory education as an enabling provision through which he is better prepared to grasp his professional subjects, entering on condition destroys the value of such education at the very point where it is the most essential, for the first year poorly done is a handicap not removed during a college course. If the conditions are heavy, the man who can overcome them and do his year of collegiate work well is a Hercules. Usually, in our experience heavily conditioned men stag-

ger along in their first year many of them fail, are forced out of college and turn to colleges demanding low or no preparatory education, or remaining, rarely recover during the entire course to a sufficient degree to do their work in a creditable manner. Except in case of very light conditions or in extraordinary instances our advice is against registration with conditions.

One method of securing the desired academic education is that adopted by the Kansas and Washington institutions where they are taken as a part of the prescribed college course. To this no very great objection appears on the surface. The State furnishes the education, both academic and collegiate, and if it can do it better or cheaper in the college than in the high school there can be but little objection. A minor criticism is that such a plan gives the appearance of a four-year professional course, when as a matter of fact, it is shorter in veterinary study than some of the three-year colleges. A study of their curriculum reveals the true condition and places them among the three-year colleges with high entrance requirements where they properly belong.

In the New York scheme elementary chemistry may be counted as a preparatory study for entrance or taken in college and count towards graduation or serve the double purpose of counting in each place. It is a required veterinary study and candidates for State license must pass an examination in it before the State Board of Examiners. Nevertheless, elementary chemistry properly belong in a preparatory and not in a veterinary course. On the other hand, physiologic chemistry, the chemistry of foods, medicines, poisons, etc., have a direct and important place in veterinary education, and the elementary study must serve as a basis. Elementary chemistry is of scant value as a preparatory study, aside from affording a liberal education, except it is followed by the applied subjects. The same may be said of elementary botany and zoology. They lose their direct value as enabling studies unless the professional courses use them as a basis for distinctively veterinary branches. High preparatory requirements become largely a farce so far as they form a founda-

tion for veterinary study unless the studies for which they form the logical basis are given in a corresponding manner, but the high requirements still retain a value in contributing toward a liberal education and indirectly enable the student to more successfully pursue his professional education and career. The solution of the problem of higher preliminary education for veterinary students is not easy of accomplishment.

The first step in securing any reform is a frank acknowledgment that it is necessary. If veterinary colleges would openly and earnestly advise intending students that it would be greatly to their personal advantage to secure a good academic education before entering college it would go far towards solving the problem. If each and every college would say as much in their announcements about the advantages of a good preparatory education as they do to laud the excellencies of their buildings, courses, equipment and faculty they would aid the advancement of veterinary education very greatly.

If this association could bring about a general agreement that each college taking part in its deliberations should recommend through its official publications that the intending student should first secure a good academic education before entering college it would exert an excellent influence, even though such colleges continued to accept them without the preparation advised.

Our most influential force in this matter is the American Veterinary Medical Association. If we could induce this association to approve a plan for the preparatory education of veterinary students which would be enforced by the granting or refusing of membership to the alumni of the college it would go far toward the correction of the evil. A plan is now in force by an association of Eastern universities by which entrance examinations are held at stated intervals by a board representing the association and the results of such examinations are accepted alike by all universities belonging to the association, so far as they relate to a given subject. This does not prevent each university from admitting students upon examinations conducted by the individual institution.

The American Veterinary Medical Association could demand that a certain quantity and quality of preliminary education of veterinary students should be required by colleges in order that their alumni shall be eligible to membership, or it might enact a rule that only such persons who as students have passed a prescribed entrance examination shall, as alumni, be eligible to membership in the association.

A change from the present chaotic condition could be only gradually made. A start could be made by requiring a reasonable examination in English, to be followed as soon as judicious by a more rigid test, after which there could be added some of the sciences or a working knowledge of German or French, and finally after some years, the full preparatory education suggested could be demanded. Such a plan would bring about a gradual change without serious injury to any well-meaning college, while it would appeal to the profession and public through the increased efficiency of the graduate. Presumably some low-grade colleges would continue just as correspondence schools and diploma mills now exist, but their influence is very slight and need not be seriously considered. In order to make such a plan effective it would be advisable to first have the support of a majority of the reputable veterinary colleges or of those colleges having a majority of the veterinary students.

It might not be essential to require that *all* students entering such colleges should pass such an examination by a central examining board but if it were required of a majority of these it would create a sentiment in favor of such requirements which would act powerfully toward extending the rule and making it universal for the college. It would soon be found that the men with good preparatory education were the successful students.

In such a plan, a uniform minimum requirement could not be permitted to act upon those colleges already exceeding such demands. Those colleges already requiring high entrance education would necessarily be unaffected by this rule, except in some particular they fall short. If the requirements in English should be advanced beyond the demands of New York, those colleges

would necessarily become affected by the rule; if German or French is required by the general rule, then New York would need comply or lose place in the association.

We believe that the time for action has come and that this association should recommend to the American Veterinary Medical Association some prudent plan for advancing the matriculation requirements in veterinary schools, that the advance should be prompt and decisive, but not revolutionary.

THE REVIEW takes much pleasure in announcing the marriage at Billings, Mont., Dec. 3, 1907, of Dr. George E. Thomas, Bureau of Animal Industry, to Miss Winifred Jansen, of that place. Amid showers of rice they left for a three weeks' honeymoon, to be spent at the Doctor's home, at Seneca, Ill. Dr. and Mrs. Thomas will be at home in Billings, Mont., after January 1, 1908.

VETERINARY FRATERNALISM.—“Frats” are now a reality in American veterinary colleges. The Alpha Psi Fraternity under national dispensation has chartered three chapters and more may follow. These are the Alpha Chapter of the New York State Veterinary College, the Beta Chapter of the Veterinary Department of the Ohio State University, and the Gamma Chapter of the Chicago Veterinary College.

HORSE TALK VIA TELEPHONE—ANIMALS MADE PART OF CIRCUIT AT FORT LEAVENWORTH.—An ingenious device by which the horse is made a part of an electrical circuit has been reported to the War Department by Lieut. A. C. Knowles, 130th Infantry, at Fort Leavenworth, who has been making tests intended to permit telegraphic and telephonic communications between mounted operators. This will permit the mounted operator to transmit messages to his base whenever necessary without stopping his horse, and is accomplished by placing a small piece of copper wire (properly connected to the telegraph or telephone instrument), against the animal's body, thus completing a ground connection through the horse's hoofs. The tests were made over all kinds of ground, and conversation was carried on without difficulty between two operators separated by five miles of wire, the horses standing in the grass.

UNHEALTHY MILK AS A FEDERAL PROBLEM.

BY D. ARTHUR HUGHES, PH. D., D. V. M. (CORNELL), INSPECTOR SUBSISTENCE DEPT., U. S. ARMY, CHICAGO, ILL.

We have heard so much of late of what has been undertaken in parts of the country, more particularly in certain widely separated States or cities, to assure a healthy milk supply, that an attempt to view the subject as a national problem, inasmuch as milk is one of the necessities in the national food supply, may be worth while. There are few currents of general thought that vitally concern the people as a whole, which do not find their way, sooner or later, to Washington. Very few large problems like this of a healthy milk supply escape the attention of the General Government. The point for us to notice is, that the scientists at Washington have recently become deeply involved in the subject of "Unhealthy Milk as a Federal Problem," and that it is being attacked by the veterinary authorities and the medical authorities alike. This motility was, in part, brought about by:

I. TYPHOID FEVER IN THE CITY OF WASHINGTON.

Despite its beautiful homes, winding avenues, air of comfort and cleanliness, Washington has a notoriously high death rate. Typhoid fever, always called a "filth disease," has, with hideous regularity, claimed far more victims there annually than in most cities of equal size in the country. As typhoid is usually considered to be a "water-borne" infection, the authorities have from year to year, directed their attention to the Potomac river, the source of water supply for the Capital. With the regular recurrence of the disease medical advice finally culminated in the appropriation by Congress of \$3,468,405 for a slow sand filtration plant. The plant, a model of its kind, was constructed under the supervision of the Engineering Corps of the United States Army, and the city was supplied with filtered

water by November, 1905. Nevertheless the following summer, July, 1906, typhoid broke out with the same devilish regularity and carried off 866 persons before the middle of October, that year.

In their extremity and bewilderment, the city Board of Health petitioned the Surgeon-General of the United States Public Health and Marine Hospital Service to co-operate in making a study of the source of the infection. Copies of the publications of this department of the public service have been periodically coming to my private library for a number of years. But none have equalled in public interest, nor in my opinion, in actual merit, the "Report on the Origin and Prevalence of Typhoid Fever in the District of Columbia,"* which covers the investigation of the disease undertaken in 1906-1907. During the summer of 1906 "almost the entire force of the Hygienic Laboratory concentrated its energies on this problem." The report shows that the investigations on the origin of typhoid in the city included a sanitary survey of the Potomac watershed; an exhaustive epidemiological study of the 866 cases of the disease occurring in the District of Columbia between June 1 and October 31, 1906, daily chemical and bacteriological examinations of the water supply; a special study of the pumps, wells and springs in the District; and also of bottled waters sold in Washington; an inspection of the dairies and laboratory examinations of the milk supply; and inspection of the ice factories; chemical and bacteriological examinations of a number of samples of ice, as well as the water of the original point where the ice was made; and the making of blood cultures, diazo and Widal reactions for practicing physicians in the District. The question of shell fish, salads, fruits and other raw food products, in relation to the disease, was studied. Further, special attention was directed to the communicability of the disease from person to person, by direct or indirect contact. The relation of sewers to wells was investigated, as well as that of privies, and the question of

* Treasury Dept., Public Health and Marine Hospital Service of the United States, Hygienic Laboratory Bulletin 35.

flies and other insects as carriers of the disease received attention. The bathing beach and public market were inspected from time to time. Finally, many specimens of feces were examined to determine the possible relation of animal parasites to the disease.

The report on these investigations, which contains over 360 octavo pages and numerous most skillfully drawn maps, and which is doubtless one of the best monographs of the kind ever written, does not represent the completion of the work. Instead of that, by a process of elimination, counting out the many lines of investigation which have proven fruitless in the search for the origin of the infection, the men of the United States Public Health Service are concentrating their energies along those lines where there is hope of discovering the mode of infection. The summary of the findings, therefore, remains for the future. Meanwhile the continuance of the work may well be a source of satisfaction. For—

II. THE CRUX OF THE TYPHOID SITUATION IS PROBABLY THE UNHEALTHY MILK VENDED IN THE CITY.

To the veterinarian, the most interesting chapters in the report are those on "The Milk Problem" and "Milk and Other Dairy Products." In the chapter on "The Milk Problem" we are informed that: "Three separate milk outbreaks occurred in Washington between June and November, 1906. Eighty-five of the 866 cases of typhoid fever studied during this time were attributed to the use of infected milk. The source of the infection was traced to cases of the disease at the city dairy, or at the dairy farm. Quite probably other cases contracted their infection from milk; but the number of such cases must remain problematical. In at least two cases employees of the dairy lived in houses in which cases of typhoid fever were being treated, and in other ways the relation between the disease, the infection and the milk was found to be very close."* This fact, and the interest it aroused, seems to have turned all eyes to the

* P. 20, Hygienic Laboratory Report 35 (*vid. ante*).

milk supply. The evidence of this is the publication, June 22, 1907, by the Department of Agriculture of Circular No. 111, of the Bureau of Animal Industry, on "Sanitary Relations of the Milk Supply"; moreover, by the issuing by the Public Health and Marine Hospital Service of the Treasury Department, to be sent out to State and local health officers and other sanitarians, of a circular letter requesting facts on epidemics among human beings, in which the infection is traceable to unsanitary milk.

The purpose of the publication of Circular No. 111, apparently, was to give advice, based on the Washington experience, to whatever persons throughout the nation were interested, on the dangers lurking in unsanitary milk and the precautions necessary to obtain a healthy commodity. The importance attached to unhealthy milk and the gravity of the situation in Washington, as it was, are alike attested by the words of the introductory note to the published Circular No. 111: "The Commissioners of the District of Columbia have appointed a committee or conference composed of scientists, physicians, veterinarians, milk producers and dealers, attorneys and business men, to consider and report on the local milk supply, to advise what steps should be taken to improve it, and *to suggest legislation to that end.*"

The purpose of sending forth the circular letter and blanks from the Surgeon-General's office of the Public Health and Marine Hospital Service is to accumulate information and later to publish it on epidemics, of whatever sort occurring among human beings in the United States which originated in or was spread by an unsanitary milk supply. The blanks call for the following facts: Name of the disease; date; place, number of cases; number of deaths; number of cases among milk consumers; circumstances on outbreak; location of original case or cases causing outbreak; manner in which milk was infected; reasons for believing milk carried the disease; reporter and reference. The work of massing these facts is undertaken by direction of President Roosevelt and the Secretary of the Treasury, Mr. Cortelyou, a statement which has much significance. Accordingly, I need ask no pardon for reprinting the letter here:

CIRCULAR LETTER.

TREASURY DEPARTMENT,
BUREAU OF
PUBLIC HEALTH AND MARINE HOSPITAL SERVICE,
Washington, August 28, 1907.

To State and Local Health Officers and Other Sanitarians:

In the study of the sanitary milk problem undertaken by this Bureau at the direction of the Secretary of the Treasury and the President, it is desired to make a compilation of all authentic cases in which disease has been spread by milk. This will include cases where milk has been the undoubted means of carrying an infectious disease to one or more persons. Whereas, in the light of present knowledge, the greatest interest centers in cases of typhoid fever, diphtheria and scarlet fever spread by this means, yet *the report of other diseases carried in this way is also desired.*

It is believed that although many epidemics caused by milk have been reported in the printed reports of boards of health and in the medical journals, a greater number known to medical men have not been so reported.

If you will co-operate by reporting to this Bureau upon the inclosed form, or otherwise, any cases of disease or epidemics spread by milk of which you have knowledge, it will be greatly appreciated.

An addressed envelope, which will require no postage, is inclosed for the return of any report you may make. * * *

WALTER WYMAN,
Surgeon-General.

III. OTHER WORK OF THE FEDERAL AUTHORITIES TO FURTHER
THE HEALTHFULNESS OF THE GENERAL MILK SUPPLY.

Nor is the present activity on the unhealthy milk problem, on the part of the Government, the first work undertaken. As far back as 1903 the Dairy Division of the Bureau of Animal Industry issued a bulletin * on "The Milk Supply of Two Hundred Cities

* Bulletin No. 46, of the Bureau of Animal Industry.

and Towns," written by H. E. Alford and R. A. Pearson (a brother, I believe, of Dr. Leonard Pearson), accompanying it with a paper entitled "Market Milk: A Plan for Its Improvement." The first paper is similar to bulletins issued, between 1900 and 1906, by the Bureau of Chemistry of the Department of Agriculture to point out the amazing variety of the local laws and regulations on "Pure Foods" which were in existence prior to the Federal Food and Drugs Act of June 30, 1906, an act which is in some respects, revolutionizing the food industries of the country. The paper of Alford and Pearson, to my mind, tends to show the propriety of some form of Federal supervision of the interstate traffic in milk and the necessity for some form of Federal milk regulations.

To be added to these productions of the Dairy Division are the investigations of the Pathological Division of the same Bureau, more particularly those on tuberculosis, which have strengthened the argument against the Koch school, and emphasized the criminality of slacking sanitary precautions against animal tuberculosis. The first bulletin of this sort published by the Bureau of Animal Industry, issued June 10, 1907, by Drs. Mohler and Washburn, entitled "A Comparative Study of Tubercle Bacilli from Varied Sources," closes with a warning against the meat and milk of tuberculous animals, couched in these words: "Sufficient evidence, in our judgment, has been adduced to warrant the adoption and enforcement of sanitary measures against the use of the milk and the meat of tuberculous animals, and to make it advisable to eliminate all tuberculous cattle from the herd or to *sterilize the milk.*"

IV. UNHEALTHY MILK AS A PROBLEM OF INTERSTATE TRAFFIC.

There is no question that the lines of commerce, along which much milk must go to reach New York, Chicago, Boston or Washington, as well as the points from which it is likely to start, make traffic in its "interstate trade." Milk vended in these cities reaches the trade center either by waggon or by train. Milk trains for New York gather the supply from New York

State, New Jersey, Pennsylvania and Connecticut; those for Chicago, from Wisconsin, Indiana and Michigan; those for Boston from Rhode Island, Connecticut and probably New Hampshire; those for Washington from Virginia and Maryland. We may be able to detect from what point any of this milk comes, and criticise the product freely. How, pray, are we to be sure what milk was originally used in the various brands of the fluid contained within hermetically sealed cans sold at the retail grocers' shop on our street corner?

The office of the Public Health and Marine Hospital Service draws attention to the fact that these diseases which they mention—scarlet fever, typhoid fever and diphtheria—are not animal diseases, but that infection of the milk with their germs may take place at any moment, from the time of leaving the udder up to the moment of consumption. The circular letter, which we print with this article, exhibits that the United States Health Service is reaching out further to get exact knowledge of all undoubted epidemics in the human subject traceable to contaminated milk.

There are two ways of looking at the question of a healthy milk supply for largely populated centers: As a local problem; as an interstate problem.

As a local problem, in order to avoid epidemics, the germs of which may be milk borne, the solution would be to require the pasteurization of all milk to be sold in the city at a local pasteurization plant somewhere within the municipality, before it could be vended; which, indeed, is the plan proposed by the Washington authorities. But this, a good solution as it may be from the scientific points of view has its objections. It places a heavy burden upon the local milk dealer; it causes considerable delay locally; it lessens profits; it exonerates the producer, unreasonably burdens the retailer, and is likely to cause an outcry from the consumer.

The responsibility for the supply of unhealthy milk belongs, in great measure to the producer and the problem is largely one of interstate traffic. As far as the diseases in question—typhoid, diphtheria and scarlet fever—are concerned, the contamination

of the milk supply in Washington in 1906 caused 10 per cent. of the deaths—a contamination which took place in all probability, the testimony shows, at the point of origin, the dairy farm; something which may often occur. As far as other diseases communicable through the milk to the consumer are concerned, such as tuberculosis and anthrax, the question is not so much one of the contamination of the milk, but the disease of the animal. The responsibility for the supply of unhealthy milk from such a source, therefore, usually should be placed, in all conscience, upon the owner of the diseased animals who produces the milk. The question, in the main, resolves itself into a question of veterinary sanitary science and sanitary police work along interstate lines.

V. INTERSTATE TRAFFIC IN UNHEALTHY MILK FROM BADLY-DISEASED ANIMALS IS AS GREAT AN EVIL AS INTERSTATE TRAFFIC IN DISEASED MEAT AND MEAT FOOD PRODUCTS AND SHOULD BE PROHIBITED.

What is really necessary to place a curb on this villainous trade in unhealthy milk, is a periodic veterinary inspection of all animals, the milk of which is to go into interstate traffic, with authority to exclude for cause; permanent tagging or branding of all such animals for detective purposes; the sealing of containers, under the supervision of the assistants of the veterinary inspector, and certification of the milk. To say nothing of diseases communicable to man through contamination of the milk after it leaves the udder—such as typhoid and scarlet fever and diphtheria—the traffic should be necessarily curbed because of the infectious and toxic conditions directly communicable to man from animals, through drinking unhealthy milk of cows or goats. The recent investigations on the transmissibility of tuberculosis add more and more to the ever-accumulating evidence of the danger of animal tuberculosis to man. We should remember that much tuberculous milk gets into the cities by way of the milk trains. Dr. A. D. Melvin informed us, at the forty-fourth annual meeting of the American Veterinary Medical Association, last sum-

mer at Kansas City, that animal tuberculosis was greatly on the increase and that the Government may have to set up a quarantine some day against certain States where the disease is now running riot. The magnitude of the animal tuberculosis question gathers something when we remember that not all tuberculous milk goes to hogs, which so commonly show lesions of tuberculosis when they reach the abattoirs. Some of this raw, tuberculous milk; nay much, goes into the interstate trade. Other infectious diseases and toxic conditions, readily directly transmissible from animals to man by drinking contaminated milk, deserve our attention. Yet they are as a mole beside a mountain compared to this of animal tuberculosis. Veterinary supervision of milch herds, with the exclusion of milk from undesirable animals from the interstate trade, necessary as it is, would put a curb on the traffic. At best, however, it would be only a temporizing measure. Stamp out animal infections and the question of a healthy interstate milk supply, as far as direct transmissibility from animals to man is concerned, would settle itself.

THE official station of Dr. William Thompson, Bureau of Animal Industry, has been changed from Mayaguez, to San Juan, P. R.

AN IMMENSE FIELD FOR PROGRESSIVE VETERINARIANS.—At present there is but one veterinarian holding official position in the New England States having charge of the laws relating to contagious diseases of animals. In Maine there are three cattle commissioners, all laymen. In New Hampshire there are three, one of whom is a physician and the other two laymen. In Vermont the head of the veterinary sanitary service is a former deputy sheriff. In Rhode Island the organization having charge of such work as falls to a live-stock sanitary commission is composed entirely of laymen, and in Connecticut this work is in the hands of a farmer. The single redeeming feature in respect to all the work in New England is the brilliant work that is being done in Massachusetts by our distinguished colleague, Dr. Austin Peters, Chief of the Cattle Bureau of the State Board of Agriculture.

PURCHASE OF COWS FOR SLAUGHTER SUBJECT TO POST-MORTEM INSPECTION.

BY O. E. DYSON, D. V. S., CONSULTING VETERINARIAN TO THE PACKING FIRMS OF CHICAGO, CHICAGO, ILL.

An address delivered before the annual meeting of the Inter-State Association of Live Stock Boards, at Richmond, Va., Sept. 16-17, 1907.

Through the courtesy of your Secretary, I have the pleasure of being with you to-day, and while I consider it a great honor to have received his request to address you upon the subject allotted me, that of the "Purchase of Cows for Slaughter Subject to Post-mortem Inspection," I also realize the fact that he had a definite object in view when the invitation was extended, namely, that your association, acting as guardian of the live stock interests of the various States here represented, desired to sit in judgment upon the facts relating to the cause of some difference of opinion regarding the disposition and purchase of dairy cows for slaughtering purposes.

The most serious problem now confronting the American packer who is conducting his establishment under the United States Meat Inspection Department is the losses sustained as a result of condemnation on account of disease. Tuberculosis being the principal cause of the losses sustained, as it constitutes at least 95 per cent. of the total post-mortem condemnations of both cattle and hogs. For that reason, also that the disease is rapidly on the increase, I am sure that you in your official capacity are vitally interested and anxious to take such steps as would check a further spread of the disease and lead ultimately to its eradication.

That this could be accomplished by concentrated and well-directed efforts on the part of your association, through co-operation with Live Stock Exchanges and the United States Department of Agriculture, there is no doubt, owing to the fact that tuberculosis comes well within the scope of most State and

Federal laws enacted for the purpose of controlling contagious and infectious diseases of domesticated food animals. That being the case, it would only seem necessary to reason from cause to effect, and exercise your authority as Live Stock Commissioners by acting in accordance with the law, in order that the best interests of a large majority of live stock producers might be served.

Much to my surprise, however, no definite policy toward the eradication of tuberculosis by either State or Federal authorities has up to this time been inaugurated, each apparently being unwilling to take a decisive stand or pursue an aggressive policy toward eradication of the principal disease, which, in the opinion of the officers of the United States Department of Agriculture, and most people, renders meat inspection imperative. Notwithstanding the law, the Department, and possibly many State boards, consider it necessary to await the awakening of the people, who have little conception of their danger as compared between the milk of an infected dairy cow and flesh of tubercular animals; therefore, delay is considered necessary, in order, perhaps, that a proper degree of public sentiment may be aroused before any definite action is taken. Just how long the necessary procedure will take, I presume no one would care to predict, neither would it be necessary to estimate or take into consideration the increase in the number of animals that would become infected, or the danger to public health through the consumption of milk from tubercular cows in the meantime, or that during the awakening the result of post-mortem condemnations incident to the delay would amount to millions of dollars, as a tribute to the lack of initiative on the part of those upon whom the responsibility now rests.

If, as the United States Meat Inspection Department now holds, the flesh of the tubercular animal is dangerous to public health, what is the comparative risk run through the consumption of raw milk by thousands of infants and children in contrast to cooked and thoroughly sterilized meat products consumed by

adults? And why should heavy losses be sustained by packers and the expense of meat inspection be borne by the Government, when a greater danger, and the primary cause leading to meat inspection, is being overlooked, or ignored, awaiting the uprising of a public demand from a sleeping populace, which no one had the temerity to awaken?

The cause of tuberculosis, thanks to Professor Koch, has long been demonstrated, and its eradication is not a chimerical proposition in any sense of the word, for the reason that tubercle bacilla never develop spontaneously, infection always depending upon a pre-existing case; consequently destruction or isolation of affected animals effectively removes the cause, a sane and practical principle of modern hygiene. Therefore, a united effort on the part of State and Federal authorities toward eradication of tuberculosis upon a well-established principle would at least serve to arouse the public to their danger, or there being no danger, would relieve the minds of those who now contend there is.

Can it be possible that the dairy interests of this country, at the expense of public health, are to be allowed to dictate the policy of the State and Federal governments in the matter of eradicating tuberculosis? If so, then it would be useless to waste time and energy in that direction.

In this connection, as pertinent to the question at issue, may it not be asked why milk as a food product has never received any consideration by the enactment of State or Federal laws requiring certification of its purity and wholesomeness when offered for sale, when the fact is generally admitted by recognized authorities that the consumption of milk from cows affected with tuberculosis is far more dangerous than consumption of the flesh of an affected animal. Such being the case, can it be considered reasonable or just that those responsible for the passage of the Meat Inspection Law should ignore the primary cause of the need of such a law by absolutely disregarding the health and products of the dairy cow and the notorious fact that

she, being affected with tuberculosis, is exclusively responsible for disseminating the disease among others of her own species, and at the same time being a general distributor of the infection to hogs, not to mention the unsuspecting public at large? With this fact in view, what, in the name of common sense, is the use of State and Federal governments making experiments and studying any disease (and especially tuberculosis) from the standpoint of contagion or infection, if the resulting knowledge of positive character cannot be applied by the way of preventing a further spread of the disease and lead ultimately to its eradication, or partial control at least?

The question of buying dairy cows subject to inspection, that has recently been agitating the minds of the packer, the shipper and the commission man, serves to illustrate and indicate the need of the establishment of some definite policy toward the eradication or control at least of tuberculosis. Viewing the situation from the standpoint of one with no financial interest involved, I can conceive of no particular or lasting benefits to be derived by the purchase of dairy cows for slaughter subject to post-mortem inspection, other than a saving upon the carcasses condemned. Slaughter and condemnation, of course, end the affected cow's career as a general distributor of infection, but in no way indicates the locality or premises where, possibly, she has for years been responsible for the infection of many of her own species, and perhaps hundreds of hogs, which have been sold to packers, only to have their carcasses condemned on account of tuberculosis, resulting from the infection possibly derived from a single cow, whose owner may have had no occasion to suspect her infection; and who knows but what milk from the identical cow in question has been supplied to infants and children, with the possible result of their infection and death on account of tuberculosis.

Now, in the face of all the facts that can be brought to bear upon the question of transmissibility of infection from animal to man, is it reasonable or rational to ignore the dairy cow as a

primary source from which a disease that causes one-third of the total deaths in this country may be in part derived? The first step, however, in the matter of attempting to eradicate or control the spread of any contagious or infectious disease would naturally be to locate the point from which the contagion or infection spreads. Therefore, with that object in view, I have endeavored to formulate a plan which, in my opinion, seems feasible, and one that would tend to at least assist in solving the problem that now confronts every one interested in the future welfare of the live stock interests, not to mention the welfare of mankind in general. The suggestions, briefly stated, are as follows:

1st. There should be a mutual co-operation between the United States Department of Agriculture, Live Stock Exchanges, State Boards of Live Stock Commissioners and meat packing interests.

2d. As it is only by making diseased cows unprofitable and healthy cows more profitable that any hope toward eradication of tuberculosis in dairy cows may be had, laws, both State and Federal, should be passed, prohibiting the sale within the State or the interstate shipment of milk or milk products from cows, unless they have been tested with tuberculin and found to be free from tuberculosis. The test should at least be repeated semi-annually. In order to prevent a scarcity of milk supplies as a result of the enactment of such laws, a provision should be made requiring the pasteurization, and sale as such, of all milk products derived from untested cows.

3d. All interstate shipments of milch cows or cattle for breeding purposes should be prohibited by State and Federal laws unless accompanied by a certificate of health and tuberculin test chart, issued under oath by a qualified veterinarian. The certificate should bear a date of not more than thirty days preceding the shipment. Each certificate should be made in duplicate, one copy to accompany the shipment, the other to be filed with the State Veterinarian of the State to which the shipment

is made. Such a provision, in view of an attempt to eradicate tuberculosis from cattle, is absolutely necessary, for the reason that many unprincipled breeders of pure bred stock, in the absence of such laws, are doing more to disseminate the disease in this country than all the other forces combined, and so long as they are able to dispose of diseased animals at remunerative prices without interference, the practice will continue. Provision should also be made by managers of Live Stock Expositions, in the absence of such a law, to prevent the exhibition or the awarding of premiums to diseased animals.

4th. All tuberculin tests should be administered by a qualified veterinarian, who shall be required by law to file, with the State Veterinarian of the State in which the test was made, a duplicate record of all such tests. All cattle reacting to the tuberculin test should be branded with a permanent and uniform brand, conspicuously located and easily recognized. Their isolation, if kept for breeding purposes, should be required by proper and perpetual quarantine regulations.

5th. All cows with well-developed udders and all bulls offered for sale at any public stock yards should bear a numbered tag and be accompanied by the shipper's manifest, showing the identity of the former owner and premises occupied by the animal for a period of three months previous to shipment to market centres; said manifest to be delivered by the shipper through his commission firm to the purchaser. With a view of securing their co-operation in the matter of eradicating tuberculosis, live stock commission firms should be requested to refuse to handle or offer for sale—except as subject to post-mortem inspection—all such cattle as do not bear a proper mark of identification.

6th. In consideration of such marking, all animals offered for sale at market centres should be purchased and paid for at their market value for slaughtering purposes, and in the event of condemnation of the carcass, the former owner and premises from which the animal was derived should be established by the

United States Meat Inspection Department by means of the tag number and shipper's manifest, notice should be given by the United States Department of Agriculture to the State Veterinarian of the State involved in the transaction. Upon receipt of such notice, it should be the duty of such State Veterinarian to investigate the occurrence, by placing in quarantine the premises from which the animal came until such time as the owner consents to a tuberculin test of all bovine species on the premises. In case of finding infection, all cattle reacting to the test should be branded, and either isolated by quarantine for breeding purposes or, together with all swine upon the premises, should be required to be shipped in quarantine to market centres and sold subject to inspection. In this way only the careless and indifferent stock raiser or dairy man would be affected, and the owner of healthy stock would no longer be required to pay tribute to the cause of disease for which he was in nowise responsible, through a general depreciation in the price of live stock as a result thereof.

7th. As public health is a State as well as a national liability, it should be safeguarded, partially at least, at the expense of each. A full price, however should not be paid for diseased animals slaughtered and condemned on account of tuberculosis, as that would tend to encourage a continuance of the present practice of carelessness and negligence on the part of owners, which is now so largely responsible for the constant increase and spread of the disease. In view of this fact it would, therefore, seem just and equitable for the State and Federal governments to apportion and pay not more than one-half of the value of the animal for slaughtering purposes; the owner, by collecting for the hide and offal of the condemned carcass, would then be well repaid for the loss of a diseased and dangerous animal, while at the same time public health and live stock interests in general would be safeguarded from danger, or the spread of infection from that source.

8th. Last, but not least, is the general need of educating the public mind to the danger to health through the milk supply from cows affected with tuberculosis. Breeders and dairymen will necessarily have to be forced to comply with laws enacted as a result of public education.

In proof of the fact that the future welfare of the live stock interests of this country demands your immediate attention in the matter of eradicating contagious and communicable diseases among live stock, it is only necessary to state that the losses now sustained by packers as a result of condemnations by the United States Meat Inspection Department on account of tuberculosis alone amounts to more than three million dollars per annum, and, as a result of the constantly increasing spread of the disease, an increase of 25 per cent. per annum would be a conservative estimate of the future losses under existing conditions, which could be attributed chiefly to inactivity on the part of the State and Federal authorities in whose care the destiny of the live stock interests is entrusted. That there would be opposition to any effort on your part to eradicate tuberculosis there is no doubt, but to those who take the initiative and carry into effect a practical solution of the problem, there will be erected in the minds of the thinking public a monument that time will never efface. That now is the time in which to undertake the task before you cannot be denied, and I hope to see the day when every member of the various State boards present will be the recipient of honor and praise for wise and vigorous action in the cause of humanity and the live stock interests, by taking an active part in the eradication of tuberculosis.

"I WOULD not think of trying to practice without the REVIEW. It grows better each year."—(*Dr. O. L. Boor, Muncie, Ind.*)

THE Government of Costa Rica desires to secure the services of a thoroughly capable veterinarian who is conversant with the Spanish language.

"THE EFFECT OF THE TUBERCULIN TEST UPON LACTATION."*

BY S. H. GILLILAND, V. M. D., M. D., AND E. L. CORNMAN, V. M. D.,
MARIETTA, PA.

In compiling this paper the writers had in mind the oft-repeated statement by herd owners and not a few veterinarians that the tuberculin test has much influence upon decreasing the milk yield, and in some sections this argument is used by dairy-men when a test is suggested.

Tuberculin is an intra and extra cellular product of the bacillus of tuberculosis. The extra cellular portion is obtained during the growth of the tubercle bacillus upon glycerine, beef broth, while the intra cellular portion is obtained by maceration and heat.

The tuberculin test after over fifteen years of use has come to be recognized as the only and best means of determining occult or hidden tuberculosis in cattle. Each day sees it grow more in favor as a means of diagnosing tuberculosis in man. In the city of Chicago within the last month Health Commissioner Evans has considered it wise to furnish tuberculin to the physicians of the city, to be used as an aid in the early diagnosis of incipient cases in man, in order that the same may receive proper advice and treatment.

The old tuberculin of Koch, which is the one used entirely for diagnostic purposes in cattle, does not contain any of the organisms of tuberculosis, and therefore the statement that it is capable of causing the disease is as impossible as spontaneous generation.

In a review of the literature we find very little information relative to the effect tuberculin has upon the products of

* Read at the 44th annual meeting of the American Veterinary Medical Association, Kansas City, Mo., September, 1907

the animals tested. A study upon the effect of tuberculin injections upon the milk of healthy and diseased cows was made by Dr. A. E. de Schweinitz¹ in 1896. These experiments pertained in particular to the variation in the amount of fat in the milk before and after the injections of tuberculin. In brief, the experiments showed little or no variation in the amount of fat in the milk of healthy cows, while the milk of reacting cows following the injections of tuberculin showed a decided decrease. The fever may have had some influence upon this decrease in the fat content.

Dr. Veranus A. Moore² states that in his experience with tuberculin there is a slight falling off in the quantity of milk in reacting animals during the test, which he believes is due to the rise of temperature.

The main object of this paper and the one in which the dairyman is most interested is the results upon non-reacting cows, and we have therefore in compiling our table based the figures upon the results of 500 non-reacting animals. In the case of reacting cows the figures are based upon the results of 48 animals. We determined the average daily number of pounds of milk the animal gave for the week preceding the test and then for each 24 hours following the test for four periods of 24 hours each. We also computed the average of these four periods, showing the gain or loss. It occurred to the writers that it would be wise to show the gain or loss for each 24 hours following the test in order that we might show just when there was a loss, if any. The loss might not have been evident had a week's average been taken.

(1) Tuberculosis Investigations, Bulletin 13, Bureau of Animal Industry, U. S. Department of Agriculture.

(2) Personal Letter.

A summary of the non-reacting cows shows the following results:

243 cows or 48.6% showed an average gain during the first 24 hours following the test of 1.15 lbs. of milk.

26 cows or 5.2% neither gained nor lost during this period.

- 231 cows or 46.2% showed an average loss during the first 24 hours following the test of 1.21 lbs. of milk.
- 189 cows or 37.8% showed an average gain during the second 24 hours following the test of 1.05 lbs. of milk.
- 14 cows or 2.8% neither gained nor lost during this period.
- 297 cows or 59.4% showed an average loss during the second 24 hours following the test of 1.39 lbs. of milk.
- 193 cows or 38.6% showed an average gain during the third 24 hours following the test of 1.15 lbs. of milk.
- 13 cows or 2.6% neither gained nor lost during this period.
- 294 cows or 58.8% showed an average loss during the third 24 hours following the test of 1.44 lbs. of milk.
- 192 cows or 38.4% showed an average gain during the fourth 24 hours following the test of 1.13 lbs. of milk.
- 14 cows or 2.8% neither gained nor lost during this period.
- 294 cows or 58.8% showed an average loss during the fourth 24 hours following the test of 1.4 lbs. of milk.
- 189 cows or 37.8% showed an average daily gain for the four days following the test of 1.05 lbs. of milk.
- 18 cows or 3.6% showed neither gain nor loss during this period over their daily average for the week preceding the test.
- 293 cows or 58.6% showed an average daily loss for the four days following the test of 1.23 lbs. of milk.

The annoyance of the injection and the temperature measurements is, no doubt, responsible for the high number of 58.6% of *non-reacting* cows which showed a slight loss in milk production following the test.

A summary of the reacting cows shows the following results:

- 5 cows or 10.4% showed an average gain during the first 24 hours following the test of .96 lbs. of milk.
- 1 cow or 2.08% neither gained nor lost during this period.
- 42 cows or 87.5% showed an average loss during the first 24 hours following the test of 2.5 lbs. of milk.
- 3 cows or 6.25% showed an average gain during the second 24 hours following the test of 1.1 lbs. of milk.

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- 45 cows or 93.7% showed an average loss during the second 24 hours following the test of 4.36 lbs. of milk.
- 12 cows or 25% showed an average gain during the third 24 hours following the test of 1.25 lbs. of milk.
- 36 cows or 75% showed an average loss during the third 24 hours following the test of 2.53 lbs. of milk.
- 17 cows or 35% showed an average gain during the fourth 24 hours following the test of 2.17 lbs. of milk.
- 3 cows or 6.25% neither gained nor lost during this period.
- 28 cows or 58.3% showed an average loss during the fourth 24 hours following the test of 2.24 lbs. of milk.
- 7 cows or 14% showed an average daily gain for the four days following the test of .62 lbs. of milk.
- 41 cows or 85.4% showed an average daily loss for the four days following the test of 2.46 lbs. of milk.

In closing we wish to acknowledge the assistance given us in compiling the figures by Mr. Carey, of Burnside Farm, and Mr. Barclay, of Soapstone Farm.

THE name of Dr. H. D. Gill, New York City, has been added to the list of practicing veterinarians registered and authorized by the Bureau of Animal Industry to inspect and test with mallein horses for exportation to Canada.

STATE EXAMINATION IN NEW JERSEY.—The State Board of Veterinary Medical Examiners will be in session at the State House, Trenton, N. J., January 24-25, 1908, for the examination of veterinarians for license to practice in that State.

A \$1,400 POSITION FOR THE RIGHT MAN.—The REVIEW is requested to recommend a veterinarian of ability and energy for the position of Deputy State Veterinarian to one of our Southern States. A man whose training includes a course at an agricultural college prior to his graduation in veterinary medicine is very much preferred, as the duties include animal husbandry work on test farms. The position offers opportunities for advancement and there are reasonably good prospects of a raise after a couple of years' service.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

SYMPTOMS OF RABIES IN LIVING DOG.

By JOHN A. McLAUGHLIN, D. V. S., Providence, R. I.

The function of the every-day practitioner is to diagnose disease, from symptoms presented in the living animal. I am investigating the *symptoms* of "rabies" in the living dog. I urgently request the help of all practitioners in the United States—in fact in the world, either by letter or in a veterinary magazine (the REVIEW preferred)—to tell me the symptoms they have seen with *their own eyes*, and whether such dogs had Negri bodies, and who was the bacteriologist who found them. I give the following cases:

Case 1.—About Sept. 12 (not sure of exact date); breed, pointer; age, did not inquire; symptoms, biting and tearing bedding, biting at stick, or anything pointed at him. To bring him near enough to shoot, showed him a piece of harness; he rushed at it and bit at it. Pointed revolver at head; grabbed my hand and revolver in mouth, but was *very careful* not to bite me. Head not examined. Night before, this dog got into horse's stall and attacked him; this horse had six or seven cuts—could not swear the lacerations were dog bites. Nov. 13 horse all right.

Case 2.—Sept. 15, 1907; breed, Boston terrier; age, about eight years; slight wound on pad of front foot about twice size of head of pin; do not think it ever drew blood; seemed excited. After examining wound under magnifying glass, he nervously grabbed owner's hand in mouth, but did not bite; owner chided him by slapping and telling him to stop; did not see dog again, but this is what I am told: Owner brought dog to stable for treatment next morning. One of the "cuffers" led him to a stall and chained him. As soon as dog felt himself chained, he became greatly excited; "cuffer" having been told by owner that dog would not bite, attempted to pet him and was bitten severely.

Negri bodies found by bacteriologists at Brown University. Cuffer underwent the Pasteur treatment. At Nov. 13 he is alive and well. Owner says dog was not bitten and never suspected rabies.

Case 3.—Sept. 16, 1907; dumb rabies; breed, Irish terrier; age, did not inquire. Symptoms: Dropped lower jaw, inability to swallow water, salivating profusely when attempting to drink. Head not examined. No history of bite.

Case 4.—Oct. 4. Was killed. Did not see dog, but investigated it thoroughly. He was a shepherd, about 14 months old. Was bitten about six weeks previous by strange dog; dog never heard of after. Negri body found by bacteriologists of Brown University. Owner was also bitten and underwent the Pasteur treatment.

Case 5.—Was bitten on cheek Oct. 1, 1907, by Case 4. This pup I had under my eye continuously. Breed, cocker spaniel; age, about four months; showed no symptoms until Oct. 21. Oct. 20 was taken into a neighbor's house and fed without my knowledge. Oct. 21, at 6 P. M. took a fit; etherized him and gave a dose of male fern, ether and castor oil. I believe it all went into his lungs. Oct. 22, was in a fitty condition all day; was informed he took a fit. Oct. 23, wagged his tail quietly; at 7 A. M. "fitty" condition had passed, but was informed he took another fit about 9.30 A. M. As he had had no movement of bowels and had showed symptoms of "stoppage," I gave him an injection of two quarts of warm water, which brought away nothing; also gave two ounces olive oil. Oct. 24, more oil and another injection of two quarts warm water, which brought away a small amount of soft yellowish fæces. Oct. 25, more oil and another similar injection, which brought away some hard fæces. Offered him some meat, but he seemed unable to swallow; cut meat very small and he ate it; was very weak, but showed no nervous symptoms whatever; but was coughing; oil choked him. Oct. 26, same treatment; more hard fæces, coughing worse. Oct. 27, died. Oct. 28, post-mortem: Pharynx and larynx healthy, but contained oil; trachea contained oil and some froth; bronchi froth and oil; lungs were of a mottled brown color, and sections through them showed them filled with a frothy liquid. Stomach all right, contained a few oats; he had evidently eaten a small amount of horse manure. Intestines, externally showed patches of yellow; internally, the small intestines had a yellowish slimy material for one-third of its length and inflamed in long streaks. About 12

inches from ilio-cæcal valve the small intestine was dilated for about 6 inches, the walls very thin, and dark in color (externally), while internally the entire dilation showed a bloody mucus and very small amount of fæces. Heart, kidneys and liver on superficial examination appeared all right. Negri bodies found by bacteriologists of Brown University.

Case 6.—Oct. 15, 1907, dumb rabies; breed, Boston bull; age, one year. Symptoms, dropped lower jaw; profuse salivation when attempting to drink; an inability to swallow water. Could detect no symptoms of nervousness; he had absolutely no nervous symptoms that five veterinarians could detect, outside of the dropped jaw, inability to drink and slobbering when he attempted to drink. I offered him about a teaspoonful of raw Hamburg steak; he licked it off floor and swallowed it. Oct. 16, symptoms same, except skin of neck was very sore from fighting against being chained up during night. Dr. Chorlton, V. S., who was with me, lifted him in buggy and we drove to Brown University and showed him on campus to Professor Gorham, the bacteriologist, who, with his assistants, examines for Negri bodies. I then lifted him into buggy and drove to the hospital of Drs. Dunn and Sullivan, two local veterinarians. I tied him in a stall, but he fought against confinement so hard, barking and choking in collar, that we put him in a box with wire door. Here he plunged his face against wire so hard and continuously that nose and mouth became covered with blood. Three or four hours later Dr. Dunn led dog out of box with slip-knot around his neck, the noose being at end of heavy stick. Dog objected to this quite strenuously and bit at stick. On this being removed he ran around hospital and ferreted out the doctors' Blue Belton bitch and tackled her quite fiercely, but when the bitch was removed he acted perfectly natural. Negri bodies were profuse. Brain examined at Brown University. History: Was bitten August 11, 1907. A little girl who witnessed the fight brought dog home. She has since identified the dog who bit this one, and he is now alive and well. This dog, without meaning to bite owner, scratched his hand with teeth, bringing blood. Post-mortem: Larynx, pharynx and every organ in body beautifully healthy.

Case 7.—Oct. 20, 1907, saw this dog in Drs. Dunn and Sullivan's hospital. Breed, bull terrier; dumb rabies; jaw dropped. Symptoms: Very marked case; head drawn slightly to one side, breathing hard and loud; very lame from bites (bites not

healed); was too sick to notice anyone, was in a sitting position. History: Strange dog attacked him and owner of Case 7 was bitten, separating them, by both dogs. No. 7 was of a very mild disposition, never starting a fight, but once started, had never been whipped. Post-mortem by Dr. Dunn: Larynx, pharynx and trachea very much inflamed. Brain examined at Brown University. Negri bodies *absent*.

Case 8.—Oct. 28, 1907: Saw this dog in box in Drs. Dunn and Sullivan's hospital. Breed, Boston bull; very valuable show bitch. Symptoms: Occasionally would raise her head, and pointing nose in air would bark; bark had a peculiar sound. Would bite her straw bedding; a stick put in box would be bitten. Was offered water, which she lapped, but could not swear she swallowed; evidently she was not very thirsty. Dr. Dunn offered her pieces of meat; she took them from his hand with *extra care and gentleness*, but would not eat. History: Owner says she was not bitten; sick but a few days. Brain examined at Brown University and Negri bodies were found.

Case 9.—Nov. 13, 1907: Breed, collie; age, four months. Symptoms: Was informed he had terrible spells of barking; then running and foaming at mouth. Found him at head of stairs. As I got near him he took a fit, barking in usual "fitty" manner and running downstairs by me. I would call it a light attack, for, as I tried to corner him, he tried, *intelligently*, to escape me, barking and yelping furiously. When I grabbed him he got worse and tried to bite me. He acted scared out of his wits. I etherized him and gave him a dose of cyanide of potash. History: Owned pup for two months; had never been well; had received worm medicine. No post-mortem. Examination of brain at Brown University. Negri bodies *not* found.

TREATMENT OF TRAUMATIC TETANUS.

By GUS. WHITE, G. M. V. C., Kyabraun, Vic., Australia.

The writer feels secure in saying that few veterinarians are fortunate enough to bring about a successful issue in a well-developed case of that most intractable affection, tetanus. Therefore the following detailed account of a case may prove of interest to some readers of the REVIEW. Being somewhat interested in the antitoxin treatment of tetanus the writer deter-

mined to give it a thorough and exhaustive trial on the first opportunity, and although one cannot judge as to the efficacy of any therapeutical measure on the facts of a single case, the writer is convinced that the antitoxin treatment of this disease is of inestimable value.

Subject: A valuable trotting mare, two years and six months of age, in good condition.

History: On March 11, 1906, the owner called at my office and requested me to visit his farm next day for the purpose of examining a mare which he described as having caught cold in the back, as she had become very stiff and was unable to turn around. He also said that she had a "red skin" protruding over the eyes. My suspicions were immediately aroused, and on inquiring if the mare had been injured in any way, I elicited the information that she had recently sustained a badly bruised heel, but which was now apparently well. I then informed him that he probably had a very bad case of tetanus to deal with, and after explaining the dangerous nature of the malady he became greatly alarmed and requested me to visit her immediately.

Symptoms: Tonic spasm of the muscular system most marked in the muscles of the head, cervical, gluteal and lumbar regions. On approaching or speaking to the animal she would start violently and almost fall to the ground. The tail was raised, forming almost a straight line with the back. Trismus well marked. Membrana nictitans covering anterior half of the eye. Temperature 102° F. Respiration about 60 per minute. Bowels somewhat constipated. Urine scanty and albuminous. The mare had great difficulty in eating and also in lowering the head to drink on account of the muscular rigidity, but on raising the drinking vessel she would drink with avidity. On making an examination of the injured foot a circumscribed yellowish red area was noticed on the outside heel of the near fore-foot, just at the union of the horny wall and bar, and resembling in every respect the so-called "corn."

Treatment: The patient was placed in a darkened, well ventilated loose box, but not free from noise, as the box was contiguous to other boxes and stalls, some of which were always occupied. The bruised area in the heel was pared out, which proved rather difficult on account of the difficulty experienced in flexing the limb, removing all traces of necrosis of tissue and causing the wound to bleed freely. It was then flushed out with

warm Hydrarg. Perchlor. solution, 1:500 for ten minutes, and the cavity dressed with glycerin, acid carbolic 1:4 and plugged with cotton wool, this treatment with the exception of the Hyd. Perchlor. being continued once daily for a week. A bucket containing 1½ per cent. solution of carbolic acid was kept constantly in front of the patient throughout the treatment, and also after active treatment had been discontinued for a period of nearly four weeks—that is, during the time tetanic symptoms were present. The animal partook freely of this solution from the first. At 9 P. M. on March 11 30 c.c. tetanus antitoxin (human) was injected hypodermically and an additional dose of 30 c.c. was administered at 1 A. M. on the 12th. On the occasion of my next visit, at 2 P. M. on March 12, the mare appeared much worse, being greatly excited and the tetanic symptoms more pronounced. Chloral hydras. 1½ ounces was administered per rectum and 20 c.c. tetanus antitoxin hypodermically. At 4 P. M. she was much improved and drank a quantity of gruel. During the next six days' treatment consisted of 20 c.c. tetanus antitoxin daily with occasional hypodermics of morphine et atropin, when the patient seemed more excited than usual. Improvement, however, was marked, from day to day, when on the 18th of March it was decided to discontinue the antitoxin, the animal then only receiving the carbolic acid solution, with usual details of nursing, etc. At the end of this time the muscles were sufficiently released to allow fairly free movements of the body, and also enable the mare to partake of solid food, consisting of green cereals, bran mash, etc. No further treatment was adopted, the patient steadily improving, until at the end of seven weeks all signs of illness had disappeared.

Undoubtedly there are cases of tetanus which would, and do, recover without very much medical treatment, but in this case, judging from the severity of the symptoms exhibited, there can be no doubt as to the beneficial influences of the treatment adopted, and in future my tetanus cases will be treated on similar line, or at any rate until I have sufficient proof that this is not the rational treatment of tetanus.

THE USE OF IRISOL AND DYMAL IN PRACTICE.

By WALTER LINCOLN BELL, D. V. S., Brooklyn, N. Y.

Case No. 1.—Gray mare, first stages of "poll evil"; poll swollen, tender and discharging pus. Treatment: Bathing with

cold water, cleansing abscess with peroxide, syringing freely with 5 per cent. watery solution irisol, about three times daily. Treatment commenced in July, covered a period of three weeks. No recurrence present time (December).

Case No. 2.—English bulldog; badly lacerated wound top of shoulder and neck from fighting. Patient was brought to my office nearly three weeks after injury, having had no treatment but household remedies. Clipped matter hair and removed old scabs, cleansed wounds thoroughly with 2 per cent. watery solution irisol, and after drying thoroughly dusted lacerated surfaces with dymal. Supplied owner with same strength solution irisol and small amount dymal with instructions to dress as above twice daily. Owner reported complete healing in one week.

Case No. 3.—Bay mare; abscess on hip from fall. Opened abscess, evacuated pus, flushed out cavity with 5 per cent. watery solution irisol through four-quart fountain syringe. Above treatment with hot bathing three times daily. Recovery rapid and much more satisfactory than formerly secured.

Case No. 4.—Black gelding; acute peditis, had picked up nail ten days before I was called, but had been kept at work after blacksmith had treated as they usually do. Found tract (where the nail had entered) discharging pus, and foot extremely painful. Syringed pus tract freely with 10 per cent. watery solution irisol, dusted some dymal powder over solar surface of foot, encased entire foot in large compress of absorbent cotton, saturated with hot 10 per cent. watery solution irisol. Changed each second day. Tenth day animal discharged for service.

Case No. 5.—Brown gelding; same as No. 4, only horse had been under treatment about three weeks when I was called. Wound discharging freely a very offensive pus and horse could not put foot to the ground. Cleansed wound freely with 5 per cent. solution irisol, injected about 10 minims pure irisol, inclosed entire foot in absorbent cotton compress, saturated with irisol solution, covered with burlap and bandaged tightly on. Dressed as above every second day for three dressings, then had shoe tacked loosely on. Instructed stableman to syringe the wound freely with 5 per cent. solution irisol, pack sole of foot with oakum saturated with the irisol solution, which was to be held in place with removable strips of hoop iron so the foot could be dressed three times daily. This horse was discharged for light service in sixteen days, which, considering the serious condition in which I found the foot, is to my mind very satisfactory.

Case No. 6.—Bay gelding; severe rope burns over the inner aspect of hock. During the night this horse got one hind leg over the rope running across the back of the stall and in the morning was found with two very severe burns. Bathed the leg thoroughly with hot water, cleansed the wounds with 5 per cent. solution irisol, dried and pressed dymal powder in over abraded surfaces. Ordered same treatment three times daily and in ten days had the animal ready for service.

I have used irisol and dymal on many other cases and have had very favorable results generally, and now use irisol in preference to the other antiseptics I formerly carried.

Its being non-toxic, of pleasant odor, as well as making a perfect solution instead of the opaque color of the coal tar carbolics, make it extremely satisfactory for surgical and canine practice, aside from its efficiency as an antiseptic.

A VETERINARY SURGEON one day prepared a powder for a sick horse and gave it to his young assistant to administer. The assistant asked how it was to be done, and the doctor gave him a large glass tube and told him to put the tube into the horse's mouth and blow the powder down his throat. A short time afterward there was a great commotion, and the doctor rushed out to find his assistant in trouble.

"Where is that medicine?" he shouted. "What's the matter?"

The assistant coughed several times severely and then spluttered:

"The horse blew first!"

A CERTAIN MAN, living in a New England village, lost a horse one day, and, failing to find him, went down to the public square and offered a reward of five dollars to whoever could bring him back.

A half-witted fellow who heard the offer volunteered to discover the whereabouts of the horse, and, sure enough, he returned in half an hour leading him by his bridle. The owner was surprised at the ease with which his half-witted friend had found the beast, and, on passing the five dollars to him, he asked:

"Tell me, how did you find the horse?"

To which the other made answer:

"Waal, I thought to myself, where would I go if I was a hoss; and I went there, and he had."

SURGICAL ITEMS.

By Drs. LOUIS A. and EDWARD MERILLAT, Chicago, Ill.

RECENT DATA IN VETERINARY SURGERY.

(Continued from December REVIEW).

Etiology of "Idiopathic" Tetanus.—There are many cases of tetanus whose etiology cannot be explained. There is no pre-existing traumatism to which the disease can be attributed, despite the most careful and persistent search over every spot of the patient's body. Previously these cases—in lieu of a more plausible explanation—have been attributed to wounds that escaped notice and have healed without leaving any trace of their previous existence. More recently it has been shown that tetanus may be of intestinal origin, that the intestines of nearly all mammals, but especially herbivora, are a favorite habitat of the bacillus of Nicolaier, which under certain debilitating influences are capable of suddenly becoming pathogenic and of injecting the economy with fatal doses of tetanic poison. Feeds contaminated with earth—the exogenous habitat of the tetanus bacillus—carry large numbers of this microbe into the digestive tract, when these are ingested raw, and thus keep the contents of the intestines of herbivora constantly infested with a dangerous creature. The intestinal contents of human beings is less constantly infested because little food is ingested without some form of preparation that would wash off or destroy the microbe. The intestinal contents of the horse, on the contrary, may be regarded as being constantly contaminated.

These simple revelations will explain many cases of equine tetanus whose etiology was previously very mysterious.

Antitetanic Serum.—Despite the fact that the widest possible publicity has been given to the uselessness of antitetanic serum in the treatment of tetanus, every meeting of veterinarians wherein the disease is discussed shows that some of us still remain unacquainted with the limitations of this "*contributor of passive immunity.*"

To set matters right, let it be remembered that although anti-

tetanic serum will perfectly neutralize the toxin *in vitro* it does not modify the symptoms, because they do not appear until the poison has been transformed into a new compound by combining with the protoplasm of the nervous cells. In short, the real tetanic poison is not the toxin elaborated by the bacillus of Nicolaier, but a new compound formed by the union of the toxin with nervous matter, upon which the antitoxin can have no neutralizing effect. "Antitoxic serum is preventive and not curative, because it can only neutralize the toxin itself. It is without effect on the new substance which in reality causes tetanus." (Principles of Vet. Surgery).

Before dismissing this subject it might be mentioned that the direct application of antitetanic serum to the tetanogenic trauma is a preventive measure *par excellence*. It brings the undiluted serum into direct contact with the poison, and besides contributing toward the immunization of the patient it promotes healing of the wound (Kinyoun, *Jour. A. Med. Assn.*, Aug., 1906).

Actinomycosis.—There is little new to mention in regard to this common affection. In man the disease is rather rare, although isolated cases are now reported with greater frequency than in former years, probably because it has not always been recognized as such. In veterinary surgery, its pathologic and clinical features are too well known to require any further discussion. Betagh (*Archives Internationales de Chirurgie*, 1906) in discussing several cases coming to his notice ends by commenting favorably upon the value of potassium iodide in the treatment. Without deprecating the value of operative treatment he concludes: "In actinomycosis of slow course and from organisms of attenuated virulence the best results will be from intensive medical treatment." In animals this medication is often too expensive and not infrequently impractical on account of the intractability of the patients, although the value is well known. Total ablation in all of the operable cases is undoubtedly the very best treatment in animals, and when this cannot be satisfactorily accomplished every part of the infected tissues that can possibly be reached, should be packed with copper sulphate, a remedy that is as specific locally as potassium iodide is internally. F. E. Jones (Illinois), after a number of years of experience, claims the failures will be few if the copper salt is diligently applied, even when the jaw is badly implicated and some of the molars have loosened in their

cavities. The cure depends upon destroying the fungus, and when this is accomplished cicatrization is rapid.

Burns.—In the treatment of burns of the first and second degrees carron oil still has many advocates, although the tendency to-day is to discard it for more modern methods. In burns, the surgeon now respects the dictates of modern wound treatment and deals with them much the same as any other wound. The burn must be disinfected and protected against subsequent infection, and although the surface is sometimes large, no part must be neglected. Saturated solutions of either sodium bicarbonate or picric acid with preference to the latter are recommended very highly for washing burned surfaces.

In animals diffused burns of the first and second degrees are usually fatal; the injured subjects do not long survive them. The magnitude of the treatment necessary to obtain results and the pulmonary complications which arise from the inhalation of smoke and hot air at the time the burn was sustained cause a high rate of mortality. In uncomplicated circumscribed burns a thorough cleansing with mercuric chloride solution and hydrogen peroxide, followed by packs of picric acid solution, is most prone to encourage a rapid cicatrization. Another method first recommended by Porteus and used to good advantage by the writer on several occasions consists of washing the parts well with a potent antiseptic, painting it thoroughly with tincture of iodine and then dusting it well with starch. In fine, it is seen at a glance that thorough antisepsis, however accomplished, is the indispensable feature of the treatment. The greatest objection to carron oil is that it is usually applied without having first disinfected the burned area.

Carcinoma.—Senn, in "A Plea for the International Study of Carcinoma," at Lisbon, last year, said: "The prevalence of this disease, its relentless course and obstinacy to all known methods of treatment, surround it with the gloom of fear and hopelessness to the public. By hearsay and observation the masses are firmly impressed with the idea that carcinoma is a fatal disease, and such a diagnosis is regarded as a death sentence." In spite of many years of constant, diligent and even frantic efforts on the part of the medical profession, urged often by pathetic appeals from very high sources, nothing definite has been disclosed as to its etiology and no treatment has been fruitful. Beyond the established fact that it is at first a local affection that may be successfully dispatched by prompt ablation, there is nothing encouraging

to say about cancer. Left alone, no matter where located, it runs its slow but certain course toward a fatal ending in from three to five years. To be frustrated at every turn that might end in solving the mysterious problem in itself is discouraging enough, but to be confronted in addition with vital statistics that show a marked increase in the disease adds materially to the importance of the problem to all mankind.

In animals, carcinoma is relatively less important than in the human being, largely on account of the short lives of most of the domestic species. In the horse, the cow and the dog, whose lives are preserved during their usefulness, malignant tumors are common enough to have excited more attention from the veterinarian. Frohner's statistics show that 47 per cent. of true tumors in dogs, 34 per cent. in horses and 29 per cent. in bovines, are malignant growths. As to the frequency of tumors in domestic animals statistics gathered at the veterinary schools of Berlin, Munich and Dresden show that about $1\frac{1}{2}$ per cent. of all horses, $4\frac{1}{2}$ per cent. of all dogs, and almost 20 per cent. of all bovines presented for treatment were suffering from tumors. By comparing these figures with Frohner's ratio of malignancy, a mere mathematical calculation at once shows that the subject of cancer is not as nugatory as is generally supposed.

The duty of the modern veterinarian in dealing with all growths is to recommend their prompt ablation, before they have encroached into forbidden grounds and before they are given the opportunity to generalize. In all non-operable cases an early histological diagnosis is always desirable in order that they may be intelligently prognosticated.

Arterial Anastomosis.—Surgery of arteries while not entirely new has never been practiced to any appreciable extent until the last few years. Previously, it has always been the custom to ligate severed or wounded arteries and veins and then trust the establishment collateral circulation to nourish the part deprived of blood by the obliteration of the vessel. Recently, it has become customary to restore the continuity of cut vessels by approximating the cut ends with sutures, as often as such a procedure is possible. The anastomosis is effected by invaginating the proximal into the distal end by a special method of suturing, whose description would require too much space to describe here (see works on General Surgery). The necessity for the operation is that of restoring circulation to a part that might become gangrenous pending the slow development of collateral circulation. The

procedure is generally successful. Secondary hæmorrhage is not as common a sequel as might be supposed. The subclavian and the common femoral (Murphy, 1900) have been successfully (Brougham, Surgery, Gynecology and Obstetrics, April, 1906) anastomosed. Experimental operations have shown that vessels anastomosed artificially sooner or later obliterate. The presence of the suture in the lumen of the vessel and the fringes of the intima gather a coagulum whose ultimate destination is that of occluding the lumen entirely, but as this process (endarteritis obliterans) is slow, the collateral circulation gradually undergoes a compensatory increase in capacity, and thus maintains a *status quo* during the obliterating process.

While there may be a few contingencies in veterinary surgery where this procedure is indispensable, as a principle of surgery it is worth knowing. It is worth knowing that cut arteries may be thus utilized to forestall an impending ischemic gangrene, although in domestic animals collateral circulation is entirely depended upon to supply the necessary nutrition when arteries are accidentally divided or intentionally sacrificed, the perfected surgical technique of the future may include arterial anastomosis and probably to very good advantage under many circumstances.

Regeneration of Divided Nerve Trunks.—There is still some controversy as to the mode by which severed nerves are restored to usefulness. On the one hand are the adherents to the *direct union theory*, while on the other are those of the *outgrowth theory*. That is to say, some still claim that reunited nerves are capable of conducting impulses almost as soon as the union is effected, whilst others deny that function is restored until the axons have grown from the proximal segment to the end-organs. Harrison (*Liverpool Medico-Chirurgical Journal*, Jan, 1906) shows pretty clearly that the weight of evidence is in favor of the outgrowth theory.

To summarize in a few words the accepted theory of nerve regeneration and without repeating the details of many experiments, one might hasten to say (1) that the experiments of those who adhere to the direct-union theory have been faulty; (2) that there is a certain amount of regenerative activity in the distal segment that materially helps the axons to reach the periphery; (3) that the neurolemmal cells of the distal segment for a time multiply and form into chains, but they are incapable of performing the function of impulse carriers until the axons from the proximal segment grow forward to perfect the mechanism, and

the restoration is not complete until the growth has extended to the very periphery; (4) that motion is restored more tardily than sensation because the muscle tissue which has atrophied during the suspended innervation must, in addition to the nerve, also be regenerated; (5) that when the cut ends are not approximated (e. g., veterinary neurotomies) the restoration is either nil or imperfect; (6) that scar tissue, even when the cut ends are approximated, blocks the nervous regeneration.

In veterinary practice neurologic surgery is practiced for the purpose of destroying sensory nerves, whilst in human practice its chief mission largely is that of restoring the function of motor nerves, hence the regeneration of nerves is studied with much greater interest by the human surgeon. Despite this difference the veterinarian transgresses so often upon the nervous system in the practice of surgery that not a single forward step in the science of neurology should be overlooked, and, furthermore, the intelligent prognosis of such diseases as shoulder "sweeny," brachial paralysis, facial paralysis, crural paralysis, *et al.*, depends entirely upon our knowledge of nervous regeneration. Its philosophy explains the processes by which atrophied regions are ultimately restored to their normal volumes; to remain ignorant of this philosophy is to continue to treat such conditions empirically. In a word, the veterinarian should not lack a good working knowledge of the anatomy, physiology and pathology of the nervous system.

Neurotomy of a Large Motor Nerve with Immediate Approximation—An Experimental Operation.—As a contribution to the study of nerve regeneration, the following described operation was performed in the surgical department of the Chicago Veterinary College, Feb. 11, 1905. The subject selected is a middle-aged bay horse in good general health, weighing 1,000 pounds, with no other blemishes than windgalls and a slight tumefaction of the right stifle that caused no lameness. The nerve selected for the operation was a small femero-popliteal, which traverses superficially over the superior third of the tibia from above downward and forward and then branches into four divisions, one of which is the motor nerve of the extensor pedis. While this large nerve is largely sensory, the fact that it contains within its sheath the sole motor nerve of the extensor pedis renders it particularly suitable for the experiment we are about to describe. It is in addition very superficial and therefore accessible for an experimental operation.

Details of the Operation.—In order to assure a clean field the region was shaved and disinfected several times during the twenty-four hours preceding the operation. Mercuric chloride and alcohol were the disinfestants used. On Feb. 11, 1905, the subject was secured on the operating table, and after another washing of the field an incision $1\frac{1}{2}$ inches long was made directly over the course of the nerve, through the skin and then through the thick tibia fascia, beneath which it is imbedded in a loose areolar tissue. The nerve was dissected from its areolar attachments, divided in the center of the incision and then immediately approximated by Murphy's method with fine twisted silk. The fascia was closed with buried sutures of catgut and the skin with interrupted sutures of braided silk. The closed wound was then covered with a thin layer of clay-glycerine dressing, upon which was matted a little cotton. No anæsthetic was used.

Upon leaving the table the horse was unable to extend the phalangeal articulations, but stumbled awkwardly on the front of the fetlock at every step. Tarsal flexion was normal, but digital extension impossible. In order to encourage prompt healing of the wound the patient was not disturbed further for eight days, during which time he was kept in the standing position. On the eighth day the dressing was removed and the stitches removed. There was a slight stitch suppuration, but union had taken place by first intention. There was some reaction beneath, as indicated by a rounded but strictly local swelling, but no suppuration other than that occurring from the sutures was ever noticed. In due time the region became normal, with the exception of a slight nodule at the seat of approximation, and this, too, disappeared after one month.

The paralysis was followed, beginning on the second week, by a pronounced atrophy of the belly of the extensor pedis, which reduced the volume of the tibial region to a mere skeleton. The tibia viewed anteriorly stood out in bold relief.

During the succeeding nine months there was no change, except that the horse learned to walk by swinging the phalanges into position automatically. It was only when surprised by sudden fright that the foot slipped backward and the weight fell on the front of the fetlock, showing that the paralysis was still complete. At the end of eleven months the atrophied muscle began to increase in volume, and with this change the extension of the digits was gradually restored. In fifteen months every-

thing was normal. To-day the horse is working, none the worse from the ordeal.

The experiment summarized shows (1) that the continuity of the nerve was restored in at least twelve days after its division; (2) that it required at least nine to ten months from its axons to grow to the end-organs; (3) that it required eleven months for the atrophy to improve; and lastly, that fifteen months were required to complete the regeneration.

(To be continued.)

RESULTS OF THE EXPERIMENTAL METHOD OF INVESTIGATION.—There can be no doubt that the main cause of the remarkable development of science in modern times has been the adoption of the experimental method of investigating nature. In every department of research this method has led to the most important advances, both in questions of theory and in practical applications to the useful purposes of life. From the beginning of its history the Royal Society has fostered the prosecution of experiment, not only in physical and chemical, but in biological inquiry, and its publications are full of records of the discoveries which have consequently been made. In no branches of investigation have the theoretical and practical successes of experimental work been more conspicuous in recent years than in physiology and its practical applications in medicine and surgery. In medicine, the careful and patient testing of the effects of drugs on the lower animals has not only led to an accurate knowledge, not otherwise attainable, of these effects as produced on the human body, but has greatly increased the number of substances now available to the physician in the treatment of disease. Without this method of investigation the progress of pharmacology, in recent years so astonishing and beneficent, would be arrested, and diseases, which may in time be successfully combated, would continue their ravages unchecked. In modern surgery the application of similar experimental work has been attended with brilliant success. Most delicate and fundamental operations on the human body have been made possible by the knowledge obtained from the treatment of animals.—[*Extract from a recent statement of the Royal Society of England.*]

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

BY PROF. A. LIAUTARD, M. D., V. M.

AN INTERESTING SURGICAL CASE [*J. L. Marshall, Assistant to G. Harris, M. R. C. V. S.*].—The record of a case of laparotomy performed on a 12-year dog, which suffered much with constipation, and in which, when examined, a foreign body had been diagnosed as the cause of the trouble. The animal was operated on and a flint stone with conglomeration of hair and gravel was removed. The author remarks that the points of interest were that only boiled water had been used to prepare the field of operation and that the temperature of the dog became and remained normal after the operation, while it had been as high as 102° F. before. Complete recovery in twelve days.—(*Veterinary Record.*)

DIAPHRAGMATIC HERNIA [*Robert Bryden, M. R. C. V. S.*].—This mare after a fall, while at work, was taken with colics and abdominal pains which never left her entirely during the 30 hours that her illness lasted. The post-mortem is very interesting: "There was a rupture about 8 inches long in the muscular portion of the diaphragm about its middle on the left side. The edges were ragged and stained with blood. Through this opening the stomach and the greater part of the small intestine had entered the thoracic cavity. After carefully dissecting the diaphragm from its attachments, the foreign organs were taken off for examination. The omentum contained nearly all the ingesta, the stomach was empty. There was a rupture 6 inches long on its lower border, and at right angles to this was a smaller tear in the peritoneal covering only, measuring about 3 inches long. The spleen was slightly enlarged, of salmon pink color, and contained a cyst about the size of a hen's egg.—(*Veterinary Record.*)

STIFFLE JOINT LAMENESS [*R. Porch, F. R. C. V. S., and William Hunting, F. R. C. V. S.*].—Record of two cases presenting similar symptoms during life and almost identical lesions

after death, as shown by very good illustrations of both. These two patients were omnibus horses and had been disabled for a long time before being destroyed. One was a seven-year-old mare and the other a black eight year old. The symptoms were as follows: At the commencement of the lameness, they were not well marked; little more than stiffness of the hind legs. Later the extensor muscles of the thigh showed excessive rigidity when the animal was moved. When made to walk the hind legs were carried forward stiff and straight, as though jointless, and the muscles in front of the femur were spasmodically contracted. Both hind legs were affected, but the near one the most. At post-mortem no lesion was found except in the stifle joint. On the trochlea of the femur the cartilage was on the inner lip, thin and roughened. It was not ulcerated and it retained its translucent quality, so that through it, could be seen, a reddened and roughened surface of bone for nearly the whole length of the inner lip of the trochlea. The patella was unaltered except that the articular cartilage corresponding to the diseased part of the femur was thin.—(*Veterinary Record.*)

LUXATION OF THE ASTRAGALO-TIBIAL JOINT [*Walter Jowett, F. R. C. V. S.*].—While being exercised a mare slipped and fell, the left hind foot caught, while the off leg slipped outwards. The animal got up without assistance, very lame, hobbling on three legs. On examination it was found that the portion of the leg from the astragalus down could be moved to a considerable extent outwards; in fact until it formed an angle of about 110° , with the upper part of the leg. There was no crepitation nor any manifestations of pains when the leg was handled. The mare was killed. On dissecting the joint there was found a rupture of the entire internal lateral ligament and of a portion of the synovial membrane. The distal end of the tibia was displaced inwards, but no bones were fractured.—(*Veterinary Record.*)

PARAPHYMOSIS IN A CRYPTOID TERRIER—OPERATION [*W. H. Flook, F. R. C. V. S.*].—A fox terrier suffers with recurring paraphymosis. At the last attack an incision has to be made under the prepuce so as to reduce it. Things went on well for a while and then returned. Castration was recommended and the removal of the present testicle carried out. This did not cure the dog until finally laparotomy had to be performed and the

testicle that was in the abdomen removed. This last operation proved successful and the dog was relieved forever of his paraphimosis.—(*Veterinary Record*.)

BLOOD POISONING IN A SHEEP DOG [*T. Hodgins, M. R. C. V. S., and A. Heinemann*].—Aged six years, this dog was very lame and reported suffering with eczema between the toes. The aspect of the leg pointed to blood poisoning. Careful examination failed to detect any wound or injury. Free incision and cleansing with chinosol solutions were resorted to. Morphia was given hypodermically. The knee was considerably swollen. Tendons above the knee commenced to necrose. Finally, after the third day, while making another examination, a wild oat with bearded husk was discovered, 2 inches above the knee. It had entered between the toes and worked its way up through the connective tissue. The treatment and the indications that followed were simple and recovery the result, after three weeks in treatment.—(*Veterinary Journal*.)

FRENCH REVIEW.

BY PROF. A. LIAUTARD, M. D., V. M.

ORCHI-VAGINALITIS IN A HORSE [*Mr. Leblanc*].—Orchitis of no specific nature, is not infrequent in horses yet is observed and in a majority of cases it is accompanied with vaginitis and the result of traumatism of some kind. Such is the following case. A stallion has probably received a blow in the scrotal region, as this is swollen, principally that on the right side. Scrotum stretched, smooth and painful on pressure. It feels like a tumor full and containing liquid. The testicle cannot be detected. The animal moves with difficulty with his leg on abduction. As his temperature is above 40° it is not advantageous to malleine him. Operation is decided. The condition of the parts do not allow castration by covered testicles, which is the classical method. As the envelopes are gorged with infiltration and form a thick covering 2 centimeters thick, an incision is made through them and the vaginal sac opened posteriorly. At that time a small quantity of grayish fluid escapes. The vaginal sheath is then opened from backwards forwards. It is found filled with gelatinous mass surrounding the testicle. The mass is removed, the testicle isolated and removed with the ecraseur. The wound is

carefully disinfected, a plug of gauze is placed in it and the edges closed together with two stitches. After removal of the other testicle, the horse is allowed to get up. The next day the temperature is down to 38° —6. Recovery went on without accident.—(*Journal de Zootechnie*.)

BIER'S METHOD IN VETERINARY MEDICINE [*Mr. Parent*].—This method is much used in human surgery in the treatment of dry, suppurative and rheumatic arthritis. It consists in the application of a bandage similar to a band of Esmarch, which is rolled, moderately, round at 10 centimeters above the diseased joint. It is left in place for 18 hours and then taken off to be put in place again, if the pain remains after 12 hours. The author has resorted to its application in two cases of injuries. In the first case a horse had a wound of the right knee, from which escapes a large quantity of pus but no synovia. The animal is on three legs, the leg is swollen and any flexion is very painful. Appetite is gone since two days. The method of Bier is applied. The next day there is marked improvement. The band is taken off. The animal is better, nevertheless the band is put on again the day after. The following day all pain is gone and cicatrization goes on rapidly without any danger of complication. In the second case the injury was on the left hind leg, a suppurating wound on the external face of the upper third of the leg, result of a kick. The hock is warm and painful, appetite gone and temperature up to 39° —3. Application of the band of Bier, and after eight days all morbid phenomena have subsided.—(*Revue Veterin.*)

CONGENITAL LUXATION OF BOTH ELBOW JOINTS IN A DOG [*Mr. Edmond*].—Bob is a two months' pup, of common breed. Since his birth he shows marked weakness of both forelegs, which has always been the same, and notwithstanding a very substantial *regime* to which he has been submitted. When the animal takes the standing position, its attitude is peculiar. On account of the deviation of the bony structure, that is of the radius and cubitus, the forelegs, in the carpal and metacarpal regions, are in contact by their internal faces. The forearms and the elbow joints rest constantly on the ground by their posterior faces. The hind legs have a direction nearly normal. Progression of the animal is very peculiar. The movements are very limited at the two elbows and the angles, formed by the bones that compose those joints, can only be open but very little

and never enough to allow the radius to assume a perpendicular direction. The joints are very much enlarged in width. By manipulation, it is easy to detect that the sigmoid cavities of the radius do not correspond to the articular surfaces of the humerus. It was a well marked case of congenital dislocation, which was accompanied with atrophy of the different muscles of the arm and forearm.—(*Revue Generale de Medec. Veter.*)

RUPTURE OF THE THORACIC AORTA IN A DOG—PRESENCE OF SPIROPTERS [*Mr. Bel*].—Having died suddenly and being suspected of having been poisoned, the autopsy of a young Danish dog was made by the author, who found a rupture of the aorta with a large amount of blood in the thorax. On examination of the artery from the cross to its passage, through the diaphragm, there was found on the right side of the vessel two small openings, through which blood was oozing. At a small distance from these, there was a small tumor, as big as a bean and further on two others, one of which was as big as an egg. These three tumors were adherent quite intimately to the aorta, whose walls had undergone a certain amount of degeneration. The tissues of these growths was hard to cut, they contained a reddish and purulent mass, in which five or six Spiroptera Sanquinolenta were found. In the other part of the blood-vessel, there were found two other growths as big as hazel nuts. This dog had been imported from Tunisia, since a few years. He had lost flesh somewhat, was in its habitual condition, eat well and was not suspected of being sick.—(*Journal de Zootechnic.*)

ABSCESS OF THE ABDOMINAL WALL IN A STEER AND HERNIA FOLLOWING [*Mr. Durand*].—The author was called to attend to this animal for a tumor that he has on the right flank. He diagnosed an abscess in the way of formation, prescribed a local treatment and after a few days opened the tumor, from which escaped grumulous pus mixed with yellowish serosity. To prevent too rapid closing of the wound and allow the cleansing of the cavity, the edges of the incision are cauterized. After a month, it seems as if the growth was reduced but little. Another similar growth is then observed on the other side of the abdomen. But this time the tumor is bigger. This abscess receives the same treatment as the first, with the same result. Opening of the second abscess, same cauterization of the edges. It is then that an examination of the condition of the first abscess is made and a hernia is found in its place. One month later a third abscess

forms. It extends to the scrotum and has the same character as the other two. Same treatment. At that time the second abscess is closed and in its place again another hernia is found. These hernias remain with the same dimensions. The author says that he expects to have another third abscess as he has had with the two first.—(*Revue Veterin.*)

LACERATION OF THE ŒSOPHAGUS IN A MARE—RECOVERY [Mr. Larrieu].—A mare had strangles. She presented a large swelling on the left side of the neck. "An abscess only," says the owner. But when it bursts, contents of the œsophagus are noticed. At the junction of the middle and upper third, there is a wound from which escapes food mixed with thick yellow fluid. The animal is offered water from a pail; she swallows and a large flow of water comes out by the wound of the œsophagus. The diagnosis is certain. The mare was kept in a field with other horses and she most likely received a kick on the side of the neck, just over the place where the swelling existed, and a traumatism was the result, in which the œsophagus had been involved. No special treatment was prescribed, only local cleaning, attention to the external wound with repeated drinking, so as to have a kind of automatic cleaning of the œsophageal wound. Feeding with dry fibrous food, lucerne, hay, etc. Complete recovery in thirty days.—(*Revue Veterin.*)

GERMAN REVIEW.

By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

THE NEW TUBERCULIN REACTION [Prof. Rubayin. Brussels].—Inasmuch as tuberculin, which has been in general use for the last fifteen years as a thermic reaction agent for the detection of tuberculosis in man and animals, is far from being infallible, we can readily understand the deep interest the entire medical world has displayed in the newly discovered reaction agent. On the 8th of May, this year, Dr. Von Pirket, of Vienna, Director of the Children's Clinic, found that a drop of tuberculin on the scarified skin of a tuberculous child produced a specific

cutaneous reaction in the form of erythematous papules, similar to vaccinia, which does not appear on healthy subjects, with the exception of a slight transitory hyperæmia. In children under two years this local action is typical and particularly characteristic when surgical or meningeal tuberculosis is present. In children over two years of age it appears less specific, and in the case of adults it seems to be almost always present. Von Pirquet concludes from these astounding symptoms that all men at a certain age are or have been tuberculous. After this discovery, numerous control experiments were undertaken and Dr. Burnet, of the Pasteur Institute was one of the first who experimented upon himself, and although he had never presented the slightest symptoms of tuberculosis, the reaction was rapid and very pronounced after the lapse of five hours. On the edges of the fine cutaneous incisions the erythema first appeared, and at the expiration of thirty-four hours these parts were covered by a red œdematous zone. The reaction had reached its maximum after forty hours. On the inoculated surface there appeared narrow streaks of necrotic tissue, on which dry crusts formed and gradually became loosened and fell off after eight days. This whole process was accomplished without hyperthemia and completely painless, nor was there an accompanying enlargement of the lymph glands. The reaction in adults is, however, not uniform and frequently it appears in a slight degree, and again it is entirely absent; as a consequence all subjects do not react. It was interesting in the case of Burnet that a scarification repeated at the expiration of a week, likewise produced a positive reaction, only it appeared less marked.

Prof. Vallée, in Alfort, experimented with domesticated animals, selecting those parts of the body which could not be injured by the animal itself; in this case the top of the neck, or the side of the withers. Upon shaving the skin and washing it with freshly boiled water and cooled (without the addition of antiseptics), then scarifying the part selected, diluted tuberculin was applied on the scarifications with a soft brush. In healthy animals (horses, cattle, guinea pigs) no reaction took place, but in 25 animals, the majority of which were previously infected in a natural manner, a reaction took place. After 24 hours there appeared along the edges of the incisions a painful œdematous swelling, which gradually increased in size until it reached its maximum after 48 hours. It persisted for four or five days, then assumed a papulous appearance, which soon desquamated.

leaving behind a surface which healed in 10 to 15 days. This condition was not accompanied by an elevation of the body temperature, nor by any constitutional disturbance. In view of these results, further experiments were made and the question investigated whether or not a specific reaction could be produced by a hypodermic injection. For this purpose five cattle, which had reacted for five days as a result of scarifications, were injected subcutaneously with diluted tuberculin. The animals reacted very intensely after 2 or 3 days. The same occurred upon the skin when it was scarified simultaneously with the injection. This seems to be independent of the severity or the extension of the existing tuberculous affection. In contradistinction to the observations of Burnet, Prof. Vallée had found that tuberculous cattle became accustomed to the cuti reaction, an interval of several weeks must elapse before a further reaction can be obtained. Failures arise only when technical errors are made or the quality of the tuberculin is impaired. The question whether or not the conjunctiva of the eye, which easily absorbs microbic toxines, is applicable for reaction purposes, was taken up by Wolff-Eisner. He instilled diluted tuberculin into the conjunctival sac. The result was that after 12-24 hours a reaction set in in the case of tuberculous animals, and Vallée obtained the same results. At first the eye watered, followed by an inflammatory irritation of the conjunctiva with slight ptosis and finally œdema of the inferior eyelid and membrana nictitans, also the deposition of fibrin and purulent mucus. This ocular reaction lasted only a few days and was unaccompanied by a rise of temperature. A local reaction in healthy animals did not take place, the result was only lacrymation.

From this series of experiments it follows that particularly in the cuti reaction we possess a valuable control agent for the thermic reaction in the domesticated animals.—(*Deutsche Tier. Wochenschrift*, No. 41, 1907).

THE SYSTEMATIC TREATMENT OF SARCOPTIC SCABIES AND ECZEMA IN THE DOG [*Von Cunys*].—There are two diseases affecting dogs, which are very similar when generalized. One is eczema, the other sarcoptic mange. Eczema appears as a diffuse erythema which is quite remarkable on the fine parts of the skin and is accompanied by an intense pruritis. As a result of scratching with the claws, vesicles and pustules form, which soon burst open and discharge a serous fluid, finally forming into a scab. In sarcoptic mange, the parasite at first produces red

points on the skin similar to flea bites, which extend over the whole body as a result of scratching. As in the disease previously mentioned, vesicles, pustules and scabs form. In both diseases there is loss of hair, the skin becomes thickened, fissured and puckered, and emits a disagreeable odor. A differential diagnosis is difficult to establish, and in the case of scabies is founded solely on the presence of the sarcoptic mite. Therefore a systematic form of treatment is always in place. In order to destroy the mite successfully we must clip the affected dog all over, then wash the body with warm water and castile soap, in order to soften and remove the scabs, so that the parasite may be exposed, and finally dried. The animal is next dipped in a 1 per cent. arsenical bath at body temperature for a few minutes, in the meantime the skin being rubbed briskly with a hard brush and subsequently dried. We can add more astringent remedies to the bath, such as sulphate of iron 5 per cent. or alum 10 per cent. Previous to bathing, it is advisable to smear some fatty substance over the scrotum, and whilst in the bath care should be exercised that none of the fluid finds its way into the eyes or mouth. The baths are repeated three or four times, and finally Helmerick's salve is to be rubbed over one-half or two-thirds of the animal's body and washed off after two days; then the remainder of the body is to be treated similarly. In treating moist eczema we must bathe the affected parts with an astringent solution, such as lead water or a decoction of oak bark 25-50 grams to the liter, and absorb the exudate with powdered starch or subnitrate of bismuth. Eczema crustosum is treated with oil of cade or some other tar ointment; this is allowed to remain on for a few days and then followed by an astringent salve, such as zinc ointment, or the following may be applied: \mathcal{R} Tannoform, 10 grains; acid salicylic, 5 grains; vaseline, 100 grains. Mix. Or, if the case of a pet dog, the following is recommended: \mathcal{R} Resorcin, 1 part; vaseline, 6 parts. Mix.—(*Journal de Lyon*.)

CONCERNING A CASE OF SO-CALLED JECORIN (LECITHIN) SPLEEN [*Dr. Dobers, Weissensee*].—In a 1½-year-old Holland bull the entire spleen presented a clayey yellow color and an abnormal soft condition of the tissues. The yellow surface was interspersed with a large number of bright red points. The interior of the parenchyma showed the same clayey color, and the follicles intensely reddened. When this softened parenchyma was cut through, a mushy substance smeared the knife. At the Berlin

Hygienic Institute the histological examination revealed that the splenic tissue was not abnormally altered, but contained considerable small rectangular and polymorphous laminae. These were found also in the pulp, connective tissue, in the lumen of the blood vessels, in the ampullae, and in the Malpighian corpuscles. The aggregation of the lamellae must have caused the abnormal coloring of the spleen. The chemical examination proved the presence of large quantities of lecithin, therefore the designation "Lecithin Spleen." The accumulation of a substance at least similar to jecorin also occurs in the spleen. Here we have to deal with highly phosphorated bodies, whose classification is still a matter of doubt. This condition is very rare, only one case being recorded in veterinary literature from the Berlin abattoir. —(*Zeitschrift für Fleisch und Milch Hygiene*, 1907.)

THE "King of Steers" has been slaughtered and his flesh used for human food. This animal is said to have been the biggest steer in the world. According to the *Cincinnati Post*, he was nearly 7 feet high, 17 feet from tip of nose to tip of tail, weighed 3,400 pounds, and was 7 years old. He had been admired by millions of circusgoers of two continents.

RUFUS RAND, 76 years old, purchasing agent for the Canadian Government in securing horses, dropped dead in a cafe in New York, December 18, 1907, from heart trouble. Mr. Rand was known throughout the United States by horsemen, through his purchases for the Canadian Government and was rated as one of the best judges of horseflesh in the land.

ALFALFA BREAD.—State Veterinarian Luckey of Missouri is of opinion that before long the leaves and stems of alfalfa will be ground into meal and bread made from it, which will in a large measure take the place of milk and of corn bread. "If for any reason a scarcity of bread stuffs should occur in the United States and the price of flour and meal should go up extremely high, I believe that alfalfa bread would be used extensively, provided, of course, that the alfalfa crop were not a failure at the same time. The seeds could not be used, as they would be too rich for a person's stomach. He would soon die upon the meal made from the seeds. It is the stems and the leaves that will be used."

ARMY VETERINARY DEPARTMENT.

AN ARMY VETERINARY SCHOOL.

LET US HAVE ONE AT FORT RILEY.

Those conversant with the life of the veterinarians of the line in the United States Army know that two striking faults, to be found among them, are: First, the absence of corporate feeling, the lack of solidarity whereby the imputation can be cast against them that there is a vexatious difficulty in getting them to act together as one man; second, the indifference to the call for earnest study of professional problems in military veterinary medicine, which, being heeded, has made men famous, like George Fleming, the translator and writer, late Principal Veterinary Surgeon of the British Army, like the present Veterinary Colonel J. A. Nunn, Principal Army Veterinary Officer of India—the listlessness which finds contentment in daily routine, especially when no sick cases are listed, the apathy to laborious effort which will add the results of investigation, or the results of military veterinary experience to the common store.

The first of these faults is illustrated when a movement is afoot for the improvement of the veterinary service of the army by Congressional enactment; for, is it not true that, when the good seed has been sown by veterinarians at large the country over and by the majority of army veterinarians, amongst the national representatives in Congress, some way or other some army veterinarians, maybe, sow tares—they send letters, perhaps, stating that they are not in sympathy with the movement. The second of these faults is illustrated in the mental inertia of some of the army veterinarians on all occasions, in the lack of enthusiasm for the study and record of new facts to be gleaned in the application of veterinary principles in the United States Army veterinary service, in the multitudinous questions, which, from year to year, on the part of the British Army veterinarians, for example, find point or answer in the London *Veterinary Journal*, or, on the part of the French Army veterinarians, in the *Revue gén. de méd. vétérinaire*.

The reasons for these conditions are not far to see.

The lack of corporate feeling is due to the variety of civilian veterinary colleges from which the men come, and the petty animosities with which the men seem to be engendered by them. How plastic the minds of young men in these veterinary colleges, up and down this fair land, are to the formative influences of educators, good and bad, is seen when their graduates enter the military service—in their notions, in the way they look at things and take hold of things, in their strange differences of opinion which nothing can heal. Just as in the building of the tower of Babel, according to the ancient story, there was a babel of tongues, so also among army veterinarians, there is apt to be a babel of mere opinions. True, we are proud of the fact, recorded in the Report of the Committee on Army Legislation of the American Veterinary Medical Association for 1905, that, amongst our army veterinarians, we have graduates of the Royal Veterinary Colleges of Berlin and London, of McGill, Harvard, Cornell and Pennsylvania Universities and the like. Yet this very blessing is in one way a curse, in that the veterinarian brings with him to the army post the strong bias for his own college; its views; its singularities; its ways. Man is not made by institutions. The potency of individuality is what counts in veterinary affairs, as in all other affairs. In the court of last resort, when we judge men, it is this individuality which turns the scales.

The reason for the second of these conditions, the listlessness of many army veterinarians, is the lack of necessity for study after the examinations, stiff as they are, for entrance to the army, are passed. There is no incentive for the army veterinarian to study after a man has once been ordered to his post. Raise of pay comes along in the regular course of things, without the necessity of passing further professional examinations for promotion—if that can be called promotion which brings neither change of grade nor status.

Under these circumstances there is an urgent need for the adoption of some scheme whereby the veterinarians of the line can be given: First, *esprit de corps*—the corporate feeling, whereby the spirit of the men will be tempered by the very same ideals; these ideals of professional men in military life, will be formed in the self-same mold; and, from those ideals, there will be no deviation nor shadow that is cast by turning. Second, the scheme adopted should tend to lift the men out of apathy,

and to make them, by intellectual industry, along professional lines, *sans reproche* in the army.

European governments, more particularly those of France, Germany and Great Britain, have been keen enough and wise enough to see the necessity of making their army veterinarians of the same pattern. In the case of France the aim has been, first of all, to require a candidate to be a graduate of a national veterinary school; secondly, to give him a special training in an army veterinary school before admitting him to a regiment; and, third, to keep him studying professional subjects by requiring him to pass professional examinations for promotion. Each French Army veterinarian, therefore, like those of Germany and Great Britain, has much the same cut, the same aspirations, the same ideals imbibed from his professional confrères in the military organization. If the experiences of Europeans cannot help us, what can? We cannot eschew their experiences. Temporarily we may; but, as time goes on, we will find that we will have to fall back on their riper judgment in the conduct of the United States Army veterinary affairs.

Like a short chapter from some Utopian romance reads, at present, to us on this side of the Atlantic, a description of the French Army veterinary school at Saumur.

The Army Veterinary School at Saumur (France).

By P. Laporte.

(Translated from *Revue gén. de méd. vétérinaire* I, 12, 1903).

The great cavalry school at Saumur is a military institution for the higher training of mounted officers of the French Army. It was founded in 1771. Around the original nucleus have gradually been built up several other technical schools connected with the cavalry, each needed in its way. They are:

1. The army veterinary school (*école d'application du service vétérinaire*).
2. The farriers' school (*école de maréchalerie*).
3. The signal service school (*école de télégraphie*).
4. The school for saddlers (*atelier d'arçarmerie*).

The army veterinary school was established in 1854, and attached to the great cavalry school. On the extensive grounds are on hand 1,400 horses of all breeds, giving the cadets a rich and valuable material for the study of conformation. The cadets must be graduates of one of the national government

veterinary colleges (those of Alfort, Lyons or Toulouse), and before acceptance must submit to a physical and moral examination. The number in attendance varies between 10 and 40 yearly; at present there are 23 young veterinarians in attendance. They have the title of "aide vétérinaire stagiaire" and wear the uniform of the assistant-veterinarians without insignia of rank. The final acceptance in the military service is dependent upon an examination covering the subjects taught at the school.

The lectures, demonstrations and exercises are selected entirely with a view of preparing for the exigencies of the military service at home and in the colonies. The course extends over ten months, commencing October 10th of each year. The subjects are:

1. Hippology (including history of the horse; the study of his exterior; the breeds and breeding of horses; training and use of horses; hygiene and sanitation).

2. Practical exercises in equestration and military drill.

3. Practical exercise in horse-shoeing.

4. Contagious diseases and their prevention, including tropical maladies.

5. Meat inspection and forage inspection.

6. Military law and exercises in rendering written reports.

7. Clinics.

Specials: Ophthalmoscopy, microbiology, topography.

The staff of instructors consists of:

One veterinary major, director of the school, instructor in hippology and military law; at present M. Boellmau.

One veterinarian I Class, captain, instructor in clinics, M. Joly.

One veterinarian II Class, first lieutenant, instructor in meat inspection and forage inspection, M. Viveau.

One first lieutenant of cavalry, instructor in equestration and military drill, M. de la Brosse.

Other special instructors are detailed from time to time for ophthalmoscopy, microbiology, topography, etc.

The daily schedule of exercises and lectures is as follows:

In the winter season: 8 to 9 A. M., exercises in farriery; 9 to 10.30, clinics, operations; 10.30 to 12, lecture; 12 to 1.30 P. M., casino; 1.30 to 3, exercises in equestration and military drill; 3 to 4.30 clinics; 4.30 to 5.30, lecture.

In the summer season, 6 to 8 A. M., practical exercises in equestration and military drill.

The army veterinary school is housed in the buildings of the former Government Stud, which was located here. The grounds are extensive and consist of a large garden for forage plants and large pastures, which are now used for paddocks and running yards. The buildings consist of separate pavilions for operating, post-mortems, isolation sheds, and cottages for the workmen. The largest building is the "Somo Sienna," of which the floor space is taken up with boxes and stalls for patients and the pharmacy; while upstairs are the bacteriological laboratory, a pathological museum and an interesting hippological museum, together with the offices of the director and the lecturers. But the most interesting building is the pavilion Henry Bouley, containing the library of rare ancient and mediæval manuscripts and books of great value, which is adjoined by the spacious lecture room. The walls of this room are adorned with a remarkable collection of paintings of army veterinarians, beginning with the time of the great conqueror Napoleon. There are memorial tablets in bronze giving the names of those who offered their lives on the battle-field. There are busts and portraits of former lecturers and students, and of well-known authors who have come from this school, such as Leuck, Séon, Nègré, Sipièrre, Targes, Neuman, Nocard—all arranged through the patriotic fervor of the late Veterinary Colonel Aureggis. Verily, here one breathes a fine atmosphere of mental work, valor and honor, that must well prepare young men for a career which calls for discipline of mind and body.

One can understand, therefore, that the veterinary cadets are a well-behaved lot of young gentlemen. They enter the school without the least previous knowledge of military discipline, while the other schools are composed of officers and men familiar with the strict rules of the service. Yet, the veterinary cadets have always carried themselves so well that the commandant of the cavalry school—a brigadier general—has taken every year the opportunity to publicly praise them for their fine conduct and discipline.

The question here arises, why should we not adopt whatever is suitable in the French method to meet our needs and put it into practical service by the establishment of an army veterinary school at Fort Riley?

Let us see the commendable points about the French Army veterinary school, which command serious consideration. First, the veterinary school is established in connection with the national cavalry school; second, it has companion schools of farriery and saddlery; third, it molds young civilian veterinarians from remote corners of France, the townsman or the countryman, into persons fit to meet army needs; fourth, it imbues them with the feeling that they are part and parcel of the army organization, professional units in a military system embodied for protective purposes.

Happily, if an army veterinary school could be established at Fort Riley, the institution thus established, though a novelty *in se* in the American military system, would not be so strangely new as to excite opposition. Fort Riley is the great cavalry post of the United States Army where there is a school for the higher training of mounted officers; where, also, a school for farriers exists; and where instruction is given in hippology to young commissioned officers, as well as instruction in subjects grouped as farriery to non-commissioned officers and enlisted men, by veterinarians of the line detailed for this special duty. Accordingly, the establishment of an army veterinary school at Fort Riley would be but another step forward, in keeping with the progress already made at that great army center for the improvement of equestration in the cavalry regiments and artillery corps. In this respect, we would be doing what the French did long ago when they established an army veterinary school at Saumur, in the year of grace 1854, where their national cavalry school had existed and thrived since 1771.

What, now, would be the benefits to be derived from the scheme proposed? The solution of the question, How to stamp out the plagues of disunity which appears among army veterinarians and to be rid of the mental inertia, is to establish an army veterinary school, anywhere, probably most profitably at Fort Riley.

To-day the young veterinarian, who may be so young indeed, as to be incapable of growing an eiderdown moustache, passes an examination and begins his army life. He knows nothing of army customs, manners, ideals; of how he should conduct himself and what is expected from him. He knows nothing of the army regulations, of military law and practice as it applies to him. He hardly knows what his duties are; nor how he shall go about them; so much is he accustomed to strange

differences outside in the civilian world. It is more than likely that the only other veterinarian that he finds at the post did not graduate at his college; so the two heartily dislike one another when that subject is broached at least. That subject, too, will crop out be he ever so canny a man. As a novice in the army, what to think, what to do, and how to act, he knows not. Small wonder that he cannot readily agree professionally with another army veterinarian, since *esprit de corps* has not been taught him nor bred into him. Small wonder that the downy couch of inertia is so acceptably snug; since there is no necessity compelling him to be primed and keep alive in recent knowledge in his science.

To-morrow these things will change: if an army veterinary school can be established to make the change. What would be the curriculum, who would be the instructors, to whom should the courses be offered? would be easy matters to settle. The veterinarian who is a newcomer in the army should pass a novitiate of at least six months at the school; not only to be reviewed in equestration military law and the regulations which concern him in the veterinary service at home and abroad, tropical diseases and the like, but to give him proper views of his work and his place in the military system, and to particularly charge him with a sense of unity, peace and concord in the veterinary body. All the men, having passed through this novitiate, will be found to have cast aside silly, nonsensical estrangements or differences which are the spawn of contention over this, that or the other college. Made more patriotic and loyal, vitalized by the spirit which will be master in the army veterinary school, the men will return to their regiments as army veterinarians in the Old World sense, as necessary and vital increments of the American military organization.

D. ARTHUR HUGHES.

SOME forty-five veterinary inspectors have been transferred within the Bureau of Animal Industry service during the short period of one month.

ALTHOUGH the Chicago Veterinary College has been obliged to turn away many students who were unable to comply with the matriculation requirements agreed upon by the Association of Veterinary Faculties and Examining Boards of North America, yet this progressive institution is forging ahead with an attendance of over four hundred students.

SOCIETY MEETINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular meeting of the above association for the month of November was held in Donaldson Hall, Broad and Filbert streets, Philadelphia, Pa., on Tuesday, November 12, 1907, Dr. J. W. Vansant, the Vice-President, occupying the chair.

The following members responded to roll-call: Drs. Lintz, Rhoads, Schnider, Cox, Underhill, Vansant, Harger, Eves, Hoskins, Marshall. Visitors: Dr. William Kelly and Dr. Laurence, of the Fifth Cavalry, P. I., and several students of the Veterinary School of the University of Pennsylvania.

Dr. William C. Prouse, of Wilmington, Del., was duly elected to membership. Dr. Laurence gave a very interesting and instructive talk upon Surra, as he had seen the disease in the Philippine Islands, which was very much enjoyed by all present.

Dr. S. J. J. Harger followed with a description of the various Trypanosoma.

In the reports of cases which followed, Dr. Harger reported performing paracentesis upon a coach horse, who was suffering from pleurisy. He aspirated early in the disease, and repeating the operation twice, the animal recovered. He suggested that as soon as the exudate was marked to operate; don't delay.

Dr. Hoskins reported that the next meeting of the A. V. M. A. would be held in Philadelphia, and Dr. Rhoads moved that a committee of five be appointed to work in conjunction with the Pennsylvania State V. M. A. to look after the interests of the A. V. M. A. meeting, which was promptly carried.

Dr. Hoskins reported several cases of glanders, which he tested with mallein, and in his opinion all animals that react should be destroyed or completely isolated.

Meeting adjourned at 11 P. M.

The regular monthly meeting of this association for December was held at the usual place, Dec. 10, 1907, Dr. B. M. Underhill, the President, occupying the chair.

The following members responded to roll-call: Drs. Lintz, Schnider, Houldsworth, Harger, Kirby, Hoskins, Jarrett, Van-

sant, Rhoads, Reichel, Underhill, Fitzpatrick, Marshall. Visitors: Drs. Williams and Laurence.

Drs. Thomas Kelly and E. S. Dubler were regularly admitted to membership.

Dr. Reichel presented a tumor for examination—a sarcoma of a sebaceous gland, which had been removed from a cow by Dr. Heretz, of Waynesburg, and sent to Dr. Reichel for examination. It was an interesting specimen, presenting much the appearance of a tubercular growth.

Dr. Harger's paper upon "Acute Bright's Disease" was thoroughly scientific, highly instructive, and was well enjoyed by all present.

Drs. Williams, Harger and Marshall reported interesting cases, which brought forth liberal discussion.

Dr. Hoskins reported the conviction of an illegal practitioner, Mr. Chany, of Green County, Pa., and he is now serving his time in jail. There are several more to be tried during the January term of court.

Meeting adjourned at 11 P. M.

A. W. ORMISTON, D. V. S.,
Secretary.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

The December meeting of this Association was held in the Lecture Room of the New York-American Veterinary College, on Wednesday evening, December 4, 1907. In the absence of President Bell, the Vice-President, Dr. Charles E. Clayton, presided. There was a good attendance of members and visitors. The minutes of the previous meeting were read and approved.

Dr. R. W. Ellis presented a case report on "Rabies in a Dog." The case was a peculiar one and the doctor related the conflicting symptoms as described by several laymen who had seen the case. The diagnosis of rabies was confirmed by the demonstration of the Negri bodies at the Board of Health Laboratory. This case brought out an interesting discussion on rabies, which was entered into by Drs. Grenside, Robertson, Chase, Crawford, Blair and others.

Owing to the absence of two of the members who were on the program to present case reports, the question box was re-

sorted to for material for discussion. The question of "What is the earliest age at which you have castrated colts?" The earliest age was nine days, reported by Dr. Clayton, although he explained he did not personally approve of castration at this early period. Drs. Ellis, MacKellar and Grenside discussed the subject.

Dr. Blair exhibited two tape-worms, one from an Indian rhinoceros and the other from a polar bear. The specimens were examined by all the members with interest, the doctor explaining that areca-nut and extract of male shield fern were the anthelmintics used in expelling the worms.

After the discussions were closed, the report of the treasurer was read. The Auditing Committee having reported the account correct, report was accepted.

The election of officers for the ensuing year was next in order and resulted as follows:

President, Dr. F. C. Grenside.

Vice-President, Dr. R. S. MacKellar.

Secretary and Treasurer, Dr. W. Reid Blair.

At the conclusion of the election, Dr. Grenside was asked to take the chair, and in doing so expressed his appreciation of the honor conferred upon him, and asked the members to continue the same hearty support given to the retiring president, Dr. Bell, so that the meetings would continue to be interesting and profitable.

On motion, seconded and carried, the president was instructed to appoint a committee to draw up suitable resolutions of appreciation of the retiring president's efforts in bringing before our meetings the interesting programs which we have had during the past two years.

The president appointed Drs. Robertson and Blair as members of this committee.

For the January meeting Drs. MacKellar, Darke and Chase volunteered case reports.

Meeting adjourned.

W. REID BLAIR, *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

A meeting of the officers of this society was held at the Vanderbilt Hotel, Syracuse, N. Y., Dec. 23, 1907, at 11 A. M.

Representatives were chosen to attend the International Congress on Tuberculosis, to be held at Washington, D. C., Sept. 21 to Oct. 12, 1908.

Committees were appointed by President W. L. Baker. Arrangements were made for the annual meeting of the society, which will be held at Utica, N. Y., in September, and other necessary business was transacted.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The twenty-fourth annual meeting of the above association will be held at the Trenton House, Trenton, N. J., on Thursday, January 9, 1908, at 10 A. M.

The program includes the President's address, report of the State Board of Veterinary Medical Examiners, election of officers, presentation and discussion of papers and the consideration of legislation for the establishment of a State Bureau of Animal Industry.

The veterinary service of the state under existing laws is unsatisfactory to the profession and does not meet the requirements of conditions in an effective and adequate manner. It seems to have grown up wholly without plan, and is in consequence so unwisely distributed among the executive departments that much of its effectiveness is lost for lack of proper co-ordination. There is found duplication, ineffectiveness, and not infrequently unwarrantable delay in the service as administered, as well as a divided responsibility and a want of professional direction.

In order to place the veterinary work upon an effective and economic basis in the state it is necessary to concentrate related lines of the service and to centralize authority and fix responsibility. The proposed legislation provides for consolidation and the establishment of a State Bureau of Animal Industry, to be conducted in the light of modern veterinary science and practice. Nothing of a greater or more far-reaching importance could come before the profession than such legislation, which concerns both agriculturists and sanitarians as well as the public in general.

President Loblein makes an earnest appeal to every member of the Veterinary Medical Association of New Jersey to attend

the forthcoming meeting. He also extends a most hearty and cordial invitation, through the REVIEW, to veterinarians in general, agriculturists and sanitarians who may be interested or concerned in the elimination of antiquated and inadequate methods for a proper and effective administration of veterinary affairs along lines of modern science and practice.

WM. HERBERT LOWE, *Secretary*.

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The eleventh annual meeting of the Genesee Valley Veterinary Medical Association will be held at the Rochester Club, Rochester, N. Y., on Thursday, Jan. 9, 1908.

Meeting will be called to order at promptly 10 o'clock A. M., when the business of the association will be transacted and directors and officers elected. A recess will then be taken for dinner, furnished by the association in the club rooms for its members and visitors.

The afternoon session will be devoted to the reading of the papers, as follows: "Horse Shoing," Dr. J. C. McKenzie; "Laminitis," Dr. William H. Mahony; "Navicular Disease and Its Diagnosis," Dr. U. Switzer; "Infections of the Foot," Dr. H. S. Beebe.

An evening session will be held for the discussion of papers, consideration of the contents of the "Question Box," ending in a social session.

J. H. TAYLOR, *Secretary*.

YORK COUNTY (PA.) VETERINARY MEDICAL SOCIETY.

This society held a very successful meeting in the parlors of the National Hotel, York, Pa., on Tuesday, Dec. 3, 1907. There was a large number of veterinarians present from the city and county. Important subjects before the society were considered and plans for future work mapped out.

In the report of the Secretary it was shown that creditable work was being accomplished by the society in York County.

Papers were read on "Epizootic," "Lymphangitis of Horses and Mules," "Paralysis of the Lips," "Influenza and Its Sequels." The new state law regarding the use of stallions for breeding purposes was discussed.

Next meeting at York, March 3, at 1 P. M.

E. S. BAUSTICKER,

Secretary.

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

A meeting of the Veterinary Association of the District of Columbia was held on the evening of November 27, 1907, at Oppenheimer's Hall, 514 Ninth street N. W., Washington, D. C., It was well attended. Matters of importance were discussed and an address was delivered by Dr. H. W. Acheson on his experiences in the local and western horse markets. The address was very interesting and instructive, and a rising vote of thanks was tendered the Doctor at its conclusion.

F. M. ASHBAUGH, D. V. S.,

Secretary.

AMONG those who will address the Veterinary Medical Association of New York City, at its meeting on the evening of January 8th, is Professor W. L. Williams, of Ithaca, N. Y. The newly-elected President, Dr. F. C. Grenside, will preside. The indications are that the attendance will be large from New York and vicinity.

A VETERINARIAN WITH PLENTY OF MONEY.—P. J. McGuinness, D. V. S. (A.V.C. '94), a prominent veterinary practitioner of the City of Newark, N. J., is handling more money than any other veterinary surgeon we know of at the present time. His success in this direction, however, is due to the fact that he is holding the office of County Collector of Essex County, New Jersey. Dr. McGuinness, however, receives a large salary, much more than is paid to veterinarians holding responsible professional positions in either state or federal service.

NEWS AND ITEMS.

PROFESSOR LIAUTARD is convalescing from an attack of acute bronchitis.

EDITOR BELL has been elected an honorary member of the Veterinary Practitioners' Club of Hudson County, New Jersey.

COOPER CURTICE, D. V. S., Bureau of Animal Industry, U. S. Department of Agriculture, is working on the tick eradication problem.

DR. O. T. AMYRAULD, Veterinarian (McGill), of Berlin, Mass., called at the REVIEW office Dec. 3, 1907, on his way to Los Angeles, Cal.

VETERINARIAN WALTER R. PICK, 1st U. S. Cavalry, formerly at Fort Sam Houston, Tex., is now stationed at Manila, Philippine Islands.

DRS. ROBERT I. BERNATH, FRANK HECKER and PAUL P. TAYLOR have been appointed veterinary inspectors in the Bureau of Animal Industry. Drs. Bernath and Hecker are on duty at Chicago, Ill., while Dr. Taylor has been assigned to Tacoma, Wash.

SOCIETY WOMAN PAYS \$5,000 FOR BULLDOG.—Miss Innes E. Schaeffer, a well-known society leader of Germantown, Pa., has purchased for \$5,000 the unbeaten English bulldog Champion Mahomet. The dog was on exhibition at the recent Philadelphia dog show, where one year ago Mahomet had won his American championship. Since then the dog has been in the hands of a dealer in Newark, N. J.

Miss Schaeffer has just completed a \$20,000 kennel and had prepared a fine apartment for the best dog that appeared at the Philadelphia show. Champion Mahomet was not entered for competition but in a special class only. His superior quality appealed to Miss Schaeffer, and, undeterred by the catalogue price of \$5,000, she bought the dog and installed him in her kennel.

Mahomet was raised in England by a tradesman. Being offered what looked like a fabulous sum to him the Englishman parted with his pet. The dog was brought to this country and has an unbeaten record.—(*New York Herald*.)

BANQUET OF THE VETERINARY PRACTITIONERS' CLUB.—The first annual banquet of the Veterinary Practitioners' Club of Hudson County, New Jersey, held at the Columbian Club, Jersey City, on Monday evening, Dec. 16, 1907, was a notable social function long to be remembered and one that would have been a credit to any state association in the land.

The attendance was large and representative in character. The decorations were beautiful; the menu was most excellent, and the postprandial speeches were much enjoyed. Dr. Thomas Emmitt Smith, President of the club, was most happy and facetious in his remarks.

Among the guests present were Drs. E. L. Loblein, New Brunswick, N. J.; Geo. H. Berns, Brooklyn, N. Y.; W. Reid Blair, Bronx Park, N. Y.; E. B. Ackerman, Brooklyn, N. Y.; T. Earle Budd, Orange, N. J.; Chas. E. Clayton, New York City; J. Huelson, Jersey City, N. J.; R. F. Rabe, M. D., Union Hill, N. J.; John B. Hopper, Ridgewood, N. J.; J. Payne Lowe, Passaic, N. J.; J. T. Glennon, and P. J. McGuinness, Newark, N. J.; James McDonough, Montclair, N. J.; Kingston, New York City; Nichols, Staten Island, N. Y., and William Herbert Lowe, Paterson, N. J.

One of the most happy incidents of the evening was the spontaneous election of Editor Bell, who was absent on account of illness, to honorary membership in the Practitioners' Club. Dr. Bell is the first and only individual to have been thus honored by the club.

From the remarks of President Smith it was evident that the club intends to be a factor in molding public opinion in Hudson County along lines of modern veterinary sanitary science. The club advances scientific and practical reasons why it is necessary to have at least one qualified veterinarian on the Board of Health of Jersey City. The prospects look bright for such an appointment to be made by the incoming Mayor, who assumes office on the first day of the new year.

The officers of the Veterinary Practitioners' Club are: Dr. T. E. Smith, President; Dr. R. F. Meiners, Vice-President; Dr. A. F. Mount, Secretary and Treasurer. Drs. R. F. Meiners, James Lindsay and R. J. Halliday formed the dinner committee, and the reception committee consisted of Drs. R. R. Ramsay, E. A. Hogan and Geo. W. Smith.

These gentlemen have demonstrated that the veterinarian has a social side that is only too often neglected in our organization work.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 8, 9, 10 & 11.	Philadelphia..	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	Jan. 9, 1908.....	Trenton.....	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb.....	Hartford.....	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	Sept., 1908.....	Utica.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....		Reading.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call of Chair.....	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.		E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n.....			R. E. Freeman, Dexter.
Central Canada V. Ass'n.....		Ottawa.....	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	Feb. 4-5, 1908.....	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	April, 1908.....	141 W. 54th St.	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	July, 1908.....	Chicago.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....			S. Beattie, Madison.
Illinois V. M. and Surg. A.....		Decatur.....	C. M. Walton, Kantoul.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	July 2-3, 1908.....	Raleigh.....	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....			C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	1st Wed., Jan.....	141 W. 54th St.	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	Jan. 14-15, 1908.....	Columbus.....	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh.....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....			F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	Jan. 9, 1908.....	Rochester.....	J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	Jan. 28, 29, 30, '08.	Cedar Rapids.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	2d Wk. Th. Jan.	St. Paul.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	March, 1908.....	Philadelphia..	F. H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	A. W. Ormiston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n.....		Denver.....	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	Feb., 1908.....	Kansas City.....	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	Jan. and June.....	Providence.....	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n.....			C. H. Martin, Valley City.
California State V. M. Ass'n.....	Mch. Je. Sep. Dec	San Francisco	C. M. Haring, U. C., Berkeley.
Southern Auxiliary of California State V. M. Ass'n.....			
South Dakota V. M. A.....	Jan. Apl. Jy. Oct.	Los Angeles..	J. A. Edmons, Los Angeles.
Nebraska V. M. Ass'n.....			E. L. Moore, Brookings.
Kansas State V. M. Ass'n.....	Jan. 2-3, 1908.....	Manhattan.....	Hans Jensen, Weeping Water.
Ass'n Médicale Veterinaire Française "Laval".....	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	Hugh S. Maxwell, Salina.
Province of Quebec V. M. A.....		Mon. and Que.	J. P. A. Houde, Montreal.
Kentucky V. M. Ass'n.....	Monthly.....	Not decided.....	Gustave Boyer, Rigand, P. Q.
Washington State Col. V. M. A.....	Monthly.....	D. A. Piatt, Lexington.	D. A. Piatt, Lexington.
Indiana Veterinary Association.....	An'l, Jan., '08.....	Pullman, Wa.	Wm. D. Mason, Pullman.
Louisiana State V. M. Ass'n.....		Indianapolis..	E. M. Bronson, Indianapolis.
Twin City V. M. Ass'n.....	2d Thu. ea. mo.	St. P.-Minneap	E. P. Flower, Baton Rouge.
Hamilton Co. (Ohio) V. A.....			S. H. Ward, St. Paul, Minn.
Mississippi State V. M. Ass'n.....			Louis P. Cook, Cincinnati.
Georgia State V. M. A.....		Auburn, Ala.	J. C. Robert, Agricultural Col.
Soc. Vet. Alumni Univ. Penn.....	June, 1908.....	Philadelphia..	C. L. Willoughby, Experiment
Virginia State V. M. Ass'n.....			B. T. Woodward, Wash'n, D. C.
Oklahoma V. M. Ass'n.....			S. C. Neff, Staunton.
Veterinary Practitioners' Club.....	Monthly.....		W. H. Martin, El Reno.
Vet. Ass'n Dist. of Columbia.....	4th Wed. ea. mo.	514-6th St., N. W.	A. F. Mount, Jersey City.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo....	Chicago.....	F. M. Ashbaugh, Wash., D. C.
Arkansas Veterinary Society.....			J. Madsen, Chicago, Ill.
York Co. (Pa.) V. M. A.....	March 3, 1908.....	York, Pa.....	B. H. Merchant, Little Rock.
Philippine V. M. A.....			E. S. Bausticker, York, Pa.
Montana State V. M. A.....	Oct., 1908.....	Helena.....	R. H. McMullen, Manila.
Veterinary Ass'n of Alberta.....			C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.

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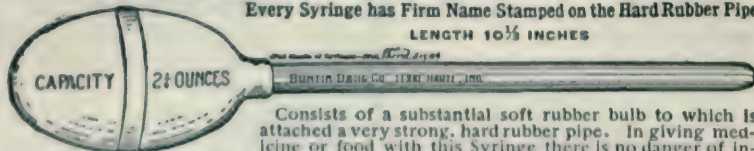
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115	Aconitine, Crystals.....	1-30 gr. 13
100	Aconitine, Crystals.....	1-20 gr. 15
116	Aconitine, Crystals.....	1-10 gr. 17
117	Aconitine, Crystals.....	1-6 gr. 23
118	Aconitine, Crystals.....	1-4 gr. 27
159	Arecoline Hydrobrom.....	1/2 gr. 1 00
160	Arecoline Hydrobrom.....	1 gr. 1 80
101	Atropine Sulphate.....	1-4 gr. 15
121	Atropine Sulphate.....	1-2 gr. 18
119	Atropine Sulphate.....	1 gr. 33
158	Barium Chloride Comp (Ellis).....	18
	{ Barium Chlor..... 7 grs. }	
	{ Digitaline..... 1-12 gr. }	
153	Cardiac Tonic.....	35
	{ Digitaline, Pure..... 1-10 gr. }	
	{ Sparteine Sulph..... 1-5 gr. }	
	{ Strychnine, Nitrate..... 1-8 gr. }	
102	Cocaine Muriate.....	1 gr. 35
124	Cocaine Muriate.....	1-1/2 grs. 45
125	Cocaine Muriate.....	2 grs. 55
120	Cocaine, 4 1/2 grs. for Veterinary Anesthesia.....	1 10
	(One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.)	
103	Colchicine.....	1-4 gr. 60
126	Colchicine.....	1-2 gr. 1 00
137	Colic (Knowles).....	65
	{ Morphine Sulph..... 2 grs. }	
	{ Atropine Sulph..... 1-4 gr. }	
	{ Aconite Cryst..... 1-20 gr. }	
104	Conline Hydrobromate.....	1-2 gr. 43
128	Conline Hydrobromate.....	1 gr. 60
105	Digitaline, Pure.....	1-8 gr. 20
129	Digitaline, Pure.....	1-4 gr. 35
156	Ergotine.....	2 grs. 18
157	Ergotine.....	4 grs. 27
113	Eserine Salicylate.....	1-4 gr. 50
133	Eserine Salicylate.....	1-2 gr. 75
134	Eserine Salicylate.....	1 gr. 1 25
135	Eserine Salicylate.....	1 1/2 grs. 1 90
106	Eserine Compound.....	1 00
	{ Eserine Salicylate..... 1-4 gr. }	
	{ Pilocarpine Muriate..... 1-2 gr. }	
	{ Strychnine..... 1-8 gr. }	
153	Eserine and Pilocarpine.....	1 50
	{ Eserine..... 1-2 gr. }	
	{ Pilocarpine..... 1 gr. }	
154	Colic (Forbes).....	2 75
	{ Eserine Salicylate..... 1 gr. }	
	{ Pilocarpine Mur..... 3 1/2 grs. }	
107	Hyoscyamine Sulphate, Crystals.....	1-8 gr. 1 00
106	Hyoscyamine Sulphate, Crystals.....	1-4 gr. 1 50
108	Morphine Sulphate.....	1 gr. 25
136	Morphine Sulphate.....	1 1/2 grs. 35
137	Morphine Sulphate.....	2 gr. 40
138	Morphine Sulphate.....	2 1/2 grs. 50
155	Morphine Sulphate.....	3 grs. 60
109	Morphine and Atropine.....	45
	{ Morphine Sulph..... 1 1/2 grs. }	
	{ Atropine Sulph..... 1/4 gr. }	
139	Morphine and Atropine.....	45
	{ Morphine Sulph..... 1 1/2 grs. }	
	{ Atropine Sulph..... 1/4 gr. }	
140	Morphine and Atropine.....	55
	{ Morphine Sulph..... 2 grs. }	
	{ Atropine Sulph..... 1-4 gr. }	
141	Morphine and Atropine.....	60
	{ Morphine Sulph..... 2 1/2 grs. }	
	{ Atropine Sulph..... 1-4 gr. }	
142	Nitroglycerine.....	1-10 gr. 14
143	Nitroglycerine.....	1-5 gr. 17
110	Pilocarpine Muriate, Crystals.....	1-2 gr. 55
244	Pilocarpine Muriate, Crystals.....	1 gr. 90
145	Pilocarpine Muriate, Crystals.....	1 1/2 grs. 1 10
111	Sodium Arsenite.....	1 gr. 12
112	Strychnine Sulphate.....	1-4 gr. 12
147	Strychnine Sulphate.....	1-2 gr. 13
148	Strychnine Sulphate.....	1 gr. 14
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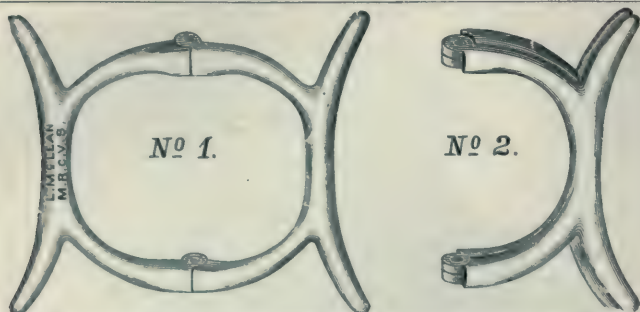
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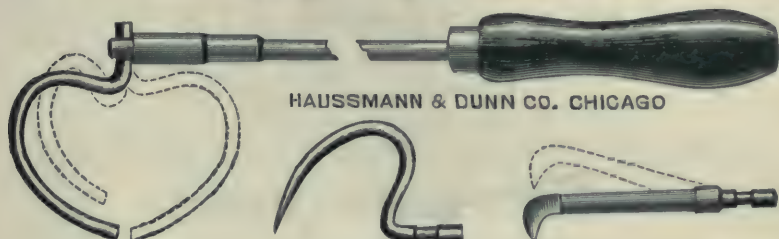
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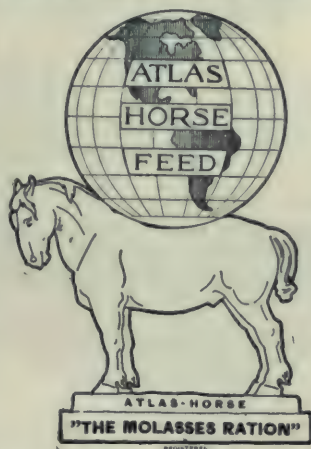
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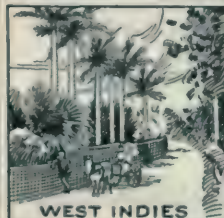
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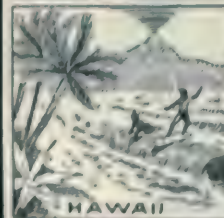
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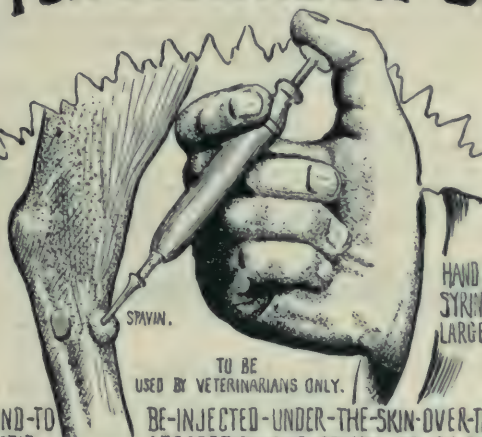
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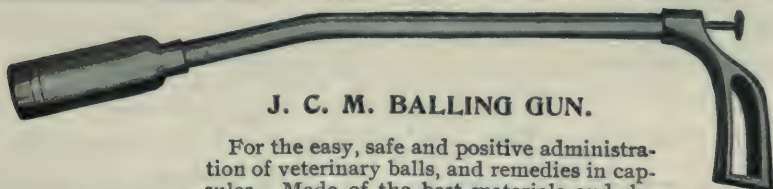
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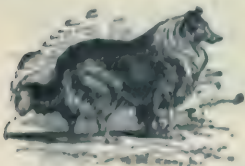
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AMERICAN VETERINARY REVIEW.

FEBRUARY, 1908.

EDITORIAL.

EUROPEAN CHRONICLE.

PARIS, FRANCE, Dec. 15, 1907.

THE NEW METHODS OF DIAGNOSING TUBERCULOSIS.—The new method of diagnosis of tuberculosis discovered by von Pirquet, and which Prof. Vallée has introduced in veterinary medicine, is occupying the columns of the periodicals of both medicines of the Continent, and it is more than probable that for some time to come we will read of the results obtained by the many experimentors who will resort to it and of the varieties of conclusions arrived at, as, indeed, they are already.

To begin with, the experiments that were made in France by many physicians in the use of the ophthalmo and of the cuti-reaction, I find in the *Recueil* a concise résumé extracted from the *Presse Medicale* by Prof. G. Petit, of Alfort.

In relation to the ophthalmo-reaction, it is stated as the conclusion of the various observations made in various hospitals, that it possesses a great semeiologic value in pulmonary tuberculosis of man and that its value is also very great in the prognosis. At any rate, the method is simple, perfectly innocuous and such that in 24 hours a positive diagnosis can be made, when in the presence of an apex of the lung which would seem suspicious or even as infiltrated with tuberculous alterations.

This conclusion is the same as the one advanced by Calmette, who said: "It seems certain that ophthalmo-reaction permits in many cases an early diagnosis, furnishing, as it does, indications always positive in confirmed tuberculous individuals, no matter of the nature of the lesions, bones, glandular, visceral meningeal or pulmonary."

It is a method which deserves to take the place of the tuberculin test, which has a tendency to become widely resorted to in human medicine.

As far as the cuti-reaction goes, it does not seem to have given as satisfactory results in the attempts that have been made. For some physicians, the conclusions are that many of the tuberculous adults tested have failed to react, possibly because of their having excessive lesions, in which cases the effects will be similar to those observed with injections of tuberculin. For other observers, on the contrary, severe reactions have been noted with patients, but slightly affected and even in subjects clinically recovered or having no apparent bacillar lesions in way of development, may also react to both the cuti and the ophthalmo-reaction. Something analogous to the case I related by Mr. Martel in my chronicles of December.

Finally, other experimentors give the assertion that no positive conclusion can be arrived at, from the use of the cuti-reaction, whether the result be positive or negative.

In other words, if there is a decision to arrive at, in relation to the use of the new methods of diagnosis of tuberculosis, it must necessarily be the one that "in the presence of the rather serious accidents that may follow cuti-reaction and of its relative infidelity, ophthalmo-reaction must be preferred to it very much."

This is contrary to what takes place in veterinary medicine where ophthalmo-reaction, also easily realized in animals as well as in man, seems to be less interesting than cuti-reaction although less easy to observe, but of much longer duration in its manifestations and less favorable to fraudulent attempts.

To this day I have not been able to find in German or English literature what experiments may have been made with these new methods of diagnosis. I have so far presented to the readers of the REVIEW merely the statements of the learned investigators, who have worked the subject in France.

But in the November number of the *Annales de Bruxelles*, I find the record of experiments, which have been carried out with the two modes with tuberculin and mallein.

As the question on this last has already been examined and decided as being rather negative in its application, we will only take a glance on what has been done with the first.

The method with tuberculin was tested on cattle by Mr. Vanderheyden, Sanitary Inspector. He has experimented upon a number of milch cows, which he divided into three lots.

In the first group his experiments had for object to follow the phenomena consecutive upon scarifications of the skin in normal condition and without application of tuberculin. In the second the action of tuberculin on the skin of animals free from tuberculosis, and in the third lot the action of tuberculin on the skin of tuberculous animals.

They were all treated according to Vallée's indications, namely by scarifications.

The conclusions of these experiments were that without desiring to affirm the complete absence of the cutaneous reaction in adult bovines, the author "believes himself justified in saying that if the reaction exists, it has no practical value in assisting to establish the diagnosis of tuberculosis."

In the experiments that Vanderheyden made with ophthalmoreaction, his conclusions are similar to those related above.

It is difficult to explain the different results, which are so far recorded, and it is probably certain that errors or differences in the methods of applying the test may account for the discrepancies that seem to exist and which are so far known. The subject is new; it is possibly amenable to improvement and researches are still going on.

Indeed, Prof. Lignieres has at a recent meeting of the Société Centrale presented a paper, which shows that he himself is hard at work. His paper has for title: "A New Mode of Reaction of the Skin to Tuberculin and its Utilization in the Diagnosis of Tuberculosis."

For Lignieres, the scarifications are not indispensable to produce, on the skin of tuberculous individuals a local reaction, with tuberculin or even with dead tuberculous bacilli.

Rubbing the skin hard with these is all that is necessary and then redness, eruption of vesicles or even a little painful swelling will appear.

The reaction is constant, when the skin has been shaved. The tuberculin must be pure, without addition of water and even with a degree of concentration a little higher than usual.

With healthy cattle no effect is produced. With tuberculous after 24 hours characteristic local reaction is present, lasting several days, but varying more or less in severity.

It is to that reaction by simple frictions that it is proper to give the name of cuti-reaction, reserving that of dermo-reaction for the operation by scarifications according to von Pirquet.

Lignieres operates as follows: The skin is shaved on a surface, measuring at least five or six square centimeters and in a region where the skin can be easily pinched and raised with the fingers. The neck is probably the best place. Parts of the body, where the skin is stretched tight, must be avoided.

Four or six drops of brute tuberculin are rubbed for half a minute on the freshly shaven skin and without scarifications. This will in tuberculous subjects give rise to a specific reaction often superior in duration and intensity to that of von Pirquet.

There is no organic reaction nor any noticeable elevation of temperature. These reactions by frictions can be repeated several times with positive results, even at intervals of 24 hours.

Sub-cutaneous injections of tuberculin made at the same time do not interfere with the perfect cutaneous reaction. But this may be reduced or come out late, if the injection has been

made one or two days before. Generally on the third day the cuti-reaction is perfect.

Cuti and dermo-reaction as well as ophthalmo-reaction can be used simultaneously without interfering with each other.

INTESTINAL PARASITES.—The bad influence upon the living-organism by intestinal parasites has, without doubt, been known for many years, but it is only recently that scientists have occupied themselves with the exact part played by helminths and larvae of insects in the transmission of microbial diseases. In a communication made before the Academy of Medicine of Paris in 1901 Prof. Metchnikoff was the first to advance the idea that helminths inoculated pathogeneous microbes in the intestinal walls and thus gave rise to infectious diseases. He principally insisted on the action of intestinal parasites in the etiology of appendicitis.

In a recent work published in the *Annales de l'Institut Pasteur*, Prof. Weinberg has presented a great number of observations related to this question and which he collected from numerous autopsies made in hospitals or upon monkeys which had served to experiments at Pasteur's Institute and also in the abattoirs of Paris, where he had had opportunities to examine intestines in a fresh condition.

The facts recorded by the professor are of great importance. In general, helminths assist in the penetration of microbes in the intestinal wall in a manner that varies according to the species of parasites. For instance, certain nematodes as the trichocephalus, the oxyure, the sclerostome, the physaloptera and the spiroptera, which can attach themselves on this wall, do inoculate directly the microbes that are on the surface of their bodies. Others, like the ascarides, although unable to remain attached to the mucous membrane, may promote the infection by biting it and thus give rise to little congestive spots, on which secondary inflammations or even ulcerations develop. Sestods are also able to produce lesions of the mucous membrane of the intestines, but their action is different. These parasites do not trans-

pierce the mucous membrane, but with their suckers they give rise to a very severe local congestion, and in the same time leave at their point of fixation the microorganisms which are on the surface of their suckers and of their bodies.

The author has been able to observe that the helminths, that have a digestive canal, are not only covered with microbes on the surface of their body, but have besides a very rich microbial flora in their intestine. Thus being a double danger for the host in which they live.

Prof. Weinberg has besides elucidated the part played by larvæ of insects and particularly that of the larvæ of *œstrum* in horses. Contrary to the opinion generally admitted to this day, he has observed that these organisms promote the formation of ulcerated and suppurated lesions in horses as well as in man. Their mode of action is the same as that of helminths in being fixed to the mucous membrane, gastric or nasal, they may inoculate pathogene microbes.

The author adds that intestinal worms can give rise to a colibacilli septicæmia which will end fatally. Although the danger increases in proportion with the number of parasites and also with the condition of the microbial flora of the intestines of the host, it is very dangerous for an animal to carry helminths, even in small number or isolated. One single *trichocephalus* has been sufficient to promote a fatal septicæmia.

Finally, it would not be surprising for parasites to be the agents of transmission of cancerous virus. The presence of *cysticercus* have been observed in cancerous tumors of the liver and kidney of two rats and the author has himself found in the digestive tracts of monkeys and of horses inflammatory polypi at the places of fixation of larvæ of *œstrum* and of various nematods.

IMMUNITY FROM TUBERCULOSIS BY THE DIGESTIVE TRACT.
—Since the question of the possibility of granting immunity against tuberculosis by the way of the digestive tract, as has been advanced by Prof. Calmette and his assistants, the thought has no doubt come to others to experiment in that direction, and

among the many whose works have already been published there appears one which has been recorded by D. Garcia. E. Jzcara, and which I find spoken of in the *Annales de Bruxelles*.

The question presented by the author was: Can anti-rabid immunization by ingestion of virulent matters be admitted? This was the result of a peculiar experiment in which a dog, of common breed, acted the principal part.

The animal which had served to demonstrate that rabid virus is not absorbed by the digestive mucous membrane, when it is healthy and free from injuries, had been fed with the carcasses of 62 rabbits, which had been used in the preparation of anti-rabid vaccine marrows. The dog remained healthy and continued for some time to feed on that diet of rabbits, from which the spinal marrows had been removed, until he had consumed as many as 300. It is then that the author thought of what might be the result on the dog in relation to immunity against rabies.

IMMUNITY FROM RABIES BY INTESTINAL TRACT.—The animal was then submitted to a series of experiments. First, he was placed in a kennel with a fox-terrier suffering with raving rabies. He was bitten on the lower jaw and on the forearm. This was renewed, the same dog receiving from the same sick one a number of similar bites. About three and a half months later another exposure to another rabid dog, and, of course, more bites. Four months after, again, when, among several bad wounds received, the mucous membrane of the lower lip was torn.

After more than four months the nervous substance of the rachidian bulb was taken from a dog that had died with dumb rabies and the dog of the experiments, the one that had received so many bites, received one intra-ocular and one intra-muscular injection in the neck of a concentrated emulsion of the said bulb.

Nevertheless the dog did not take rabies!

As all the animals which had bitten him had certainly died from rabies, as diagnosed by clinical signs, by the positive researches of the nodules of Van Gerichten and Nelis and of the

corpuscles of Negri and by inoculations to other rabbits, how can the resistance of the dog be explained if not by immunization through the digestive canal?

* * *

The author thinks that in the process of immunization against rabies it is not the active agent which gives the immunity, but its toxins. When to immunize one resorts to hypodermic methods the emulsion of rabid substance is deposited in the subcutaneous tissue. From the substance, the amorphous or chemical part, which is the toxin, is rapidly absorbed and if some virulent germs are also with it, these are in small number, through the lymphatic vessels; they go to the blood and there their destruction increases the toxin and re-enforces the immunity. In this way the connective tissue acts as a sifter of the injected nervous substance, leaving the soluble principles pass and holding back the other bodies.

In the present case the dog took in large quantities of rabid virus. Probably the gastric juice, by its chlorhydric acid had destroyed the living agent of rabies, but not the toxins, which absorbed by the gastro-intestinal mucous membrane had stimulated the nervous centers to defend themselves and produced an antitoxin able to neutralize any new rabid invasion, no matter by which way it might be introduced in the organism.

Probably this is what occurred in the dog. The repeated ingestion of virulent rabbits has produced in its organism a toleration so complete that the acquired resistance against the invasion of the rabid agent could not be overcome, neither by the natural mode of contagion (repeated and deep bites from rabid animals) nor by intra-ocular nor intra-muscular injections of emulsion of rabid bulb.

This very interesting question is still under consideration and we are promised new information in the matter.

* * *

ACTINOMYCOSIS OF THE PHARYNGEAL GLANDS.—Decidedly American products have had show in Europe, or, at least, in

Germany. That is, if I can judge from the relation made in the *Zeitschrift für Fleisch und Milch-hygiene*, by Dr. Stolpe, and reproduced in the *Revue Generale*. Rare in cattle killed in Germany, actinomycosis of the lymphatic glands seems relatively frequent in American cattle, if one judges by the numerous cases which are recorded at Hamburg, in the pharyngeal glands that remained attached to the salted tongues of American origin, amounting to as much as 2 per cent. The presence of the characteristic yellowish granulations being often absent, the diagnosis to be sure had to be made by bacteriological examination. The matter of examination, treated by potash and spread in very thin layer, allows the detection of the characteristic radiating masses.

The alterations differ according to the form of the affection, acute or chronic. In the acute form the glands are tumefied, softened in the center, and sometimes more or less hæmorrhagic. There is no fibrous enveloping tissue. On the contrary, the chronic forms are specially characterized by the formation of a thin, whitish zone of fibrous tissue surrounding the actinomycotic centers. In the majority of cases it is a granulation as big as a small seed of chenevis or that of a pea easily enucleated. Under the action of the salt the brown, yellowish coloration of these centers differ from that of ordinary collections. In other cases masses are discovered as large as a bean, also surrounded by a fibrous envelope, and containing a puriform yellowish substance. These masses sometimes contain yellow granulations. Finally, also, the tissue of the gland may have been transformed into a true abscess. In this case it is possible to take them for tuberculous lesions, so much more so that it is not uncommon to find the two diseases existing in the same individual. Microscopic examination must then be resorted to. The seat of these lesions has always been the pharyngeal glands. The retro-pharyngeal glands and the tongue were, on the contrary, always free. In one case, in a salted shoulder, also of American origin, actinomycosis was found in the prescapular glands.

INFECTIOUS ANÆMIA OF HORSES.—The investigations and publications relating to infectious anæmia of horses due to the work of Prof. Vallée and his assistant, Carré, which I have made known to our readers in various issues of the REVIEW, have received in Germany the attention of Prof. Ostertag, of Berlin, who has published in the *Zeitschrift für Infektions-Krankheiten* an article entitled "Researches Upon the Presence and Prevention of Infectious Anæmia of Horses," an extract of which is reproduced in Prof. Laclainche's *Revue*.

Enzooties of the disease have been observed in Elsass-Lorraine, and the center of the disease prevails in France, Luxemburg and some parts of Germany. The recent works of Vallée and Carré have shown that contagious anæmia is transmitted not only by the blood, but also by the urine of the sick horses.

The researches of Ostertag had for object to define the condition of hygiene, stabling, feeding and watering that existed at the time of the apparition of the disease. From these investigations it first appears that the disease was much less extensive than was at first thought and its apparition dated from the introduction of horses bought in that region and which had been resold two or three times afterwards.

The results obtained in Berlin agreed perfectly with those of Vallée and Carré. Blood and urine are infectious. The transmission of the disease is obtained not only by inoculation in veins or under the skin, but also by ingestion. Natural contagion takes place through food and water, soiled by the urine of the sick. Experiments are now in course of execution to decide whether saliva is or is not virulent. The keeping of a healthy horse alongside a diseased one has not been followed by contagion.



A small quantity of blood or serum from a sick animal (5 c.c.) is sufficient to give rise to infection by subcutaneous injection. But, large quantities of blood or urine (150 c.c. at least) of a horse affected with the acute form are necessary to

infect by ingestion a healthy one. The ingestion of 20 c.c. of serum from an acute form (kept 7 weeks in a refrigerator) gives rise only to a temporary fever on the 24th day. Ingestion of 300 c.c. of serum from a chronic case produces fever after 21 days. Ingestion of 600 c.c. of urine of the same sick animal gives one day of fever after 15 days and 3 days after 22.

From these facts it seems as though the soiling of hay and straw by small quantities of virus ought not to give rise to any infection unless the contamination be repeated and a sufficient number of times to have a producing influential effect.

Two healthy horses kept at Berlin, with a sick individual and eating its soiled bedding, remained healthy.

The introduction in a healthy stable of a sick animal is the ordinary form of transmission. Therefore any horse coming from a suspicious quarter must be kept away by isolation as perfect as possible. Drinking in common troughs must be avoided and only pure and clean water be used. The stock recently introduced into a stable must be watched for at least three months. If in a stable, the disease makes its appearance, the sick must be removed at once, the place thoroughly disinfected and white-washed. Information shall be given of the presence of the disease to people in the neighborhood and directions given as to the means to detect it as quickly as possible.

The treatment that has given to Ostertag the best encouraging results is the use of Atoxil, which he has employed in two cases.

BIBLIOGRAPHY.—I am afraid I have trespassed considerably over the space that is allowed me, but I must say a few words more, as I have received from the house of Asselin and Houzeau a new work which deserves all attention.

It is written by Dr. E. Nicholas, an army veterinarian, and has for title "*Ophthalmologie Veterinaire et Comparee*" (Comparative and Veterinary Ophthalmology).

Dr. Nicholas has already made himself known as a specialist on ophthalmology by previous publications, which although of

less importance perhaps, have no doubt justified the expectations that he would soon publish a more complete work.

This he has done, and this new book is a very valuable addition which was much needed and which, with the recent works of Moller, Vachetta, Bayer and Van Mater, will hold a good position.

The work is divided into 16 chapters. First, the reader is presented with a clear and complete description of the various methods of exploration of the eye, as applicable to domestic animals, and afterwards the affections of the different parts constituting the apparatus of sight are successively considered: conjunctiva, sclerotic and cornea, uveal tract (iris, ciliary body and choroid), retina and optic nerve, crystalline lens and vitreous humor. Then the ocular globe as a mass and its appendages, orbital cavity, eyelids, lachrymal and motor apparatus. To render the reading of the book easier, the author has given the essential anatomic points of the various parts at the beginning of each chapter. Quite a complete series of prescriptions for ophthalmic purposes form the last chapter. There is also a long bibliography of the most important information published on the subject. The work is illustrated by 165 figures and also by nine handsome chromolithographic plates, specially interesting and instructive.

I must also acknowledge the receipt of a report from Prof. Dr. Ostertag on milk trade and the struggle with bovine tuberculosis ("Die Milchwirtschaft und die Bekämpfung der Rinder Tuberculose"), published by von Richard Schoetz, of Berlin, a report on the importation of cattle from the Argentines to Italy ("Importazione di Buoi dall' Argentina"), by Prof. Antonio Pirocchi. Several bulletins from the Bureau of Animal Industry on black leg (nature, causes and prevention), on notes on parasites, nematodes, etc., etc.—a conference of the State Board of Health of Louisiana, where our friend Dr. Dalrymple figures with several communications, and, finally, a report of the agricultural station of North Dakota with an article on "Bovine Tuberculosis" by Dr. L. Van Es.

A. I.

THE PROFESSION'S OPPORTUNITY.

In deciding upon Philadelphia as the place for the annual assembly of the American Veterinary Medical Association in 1908 the executive committee had more in mind than the cordiality of the invitation of the profession of the commonwealth of Pennsylvania, and the fact that those who attended the meeting would have an opportunity of inspecting the extensive and magnificent buildings of the Veterinary Department, University of Pennsylvania, now in course of erection, at a cost of \$350,000. What this means for veterinary education in America was not underestimated, nor were other advantages overlooked, yet there was one consideration that seemed to transcend all others in favor of Philadelphia over a western city, and that was the fact that the great International Congress on Tuberculosis would meet in Washington, D. C., the same month, without interfering with dates, thus affording the members of our profession an opportunity to extend their stay in the East long enough to attend the congress at the capital of the nation with profit to themselves. It is indeed seldom that two such important gatherings of scientific men occur, both in point of place and date, so near and convenient to each other.

Another advantage is that the noted savants coming to our shores from foreign countries to attend the International Congress may, by leaving home a little early, have an opportunity to attend and participate in the proceedings of the American Veterinary Medical Association. President Dalrymple has already extended a most cordial invitation to a number of distinguished veterinary sanitarians and others of Great Britain and the continent of Europe. The prospects are bright that the American Veterinary Medical Association may have the honor this year at Philadelphia of welcoming and entertaining as its guests some of the most distinguished scientists of the old world. They will bring the latest and best thought to enrich our profession here, and, let us hope, that we may be able to add some-

thing worth while to their store of knowledge that will be useful in the countries from whence they come.

The success of meetings of all kinds is apt to be judged by the size of the attendance, but do not let us judge the success of the A. V. M. A. by any such standard, but rather by the scientific character and value of our contributions. It may seem to some rather early to talk of meetings which will not take place until next September, but the REVIEW would take advantage of this opportunity to impress upon the minds of its readers the importance and necessity of early and thorough preparation. You want to contribute of your best to the program and something that has been carefully prepared. Now is the time to make the preparation.

The profession suffers, not so much from a lack of advancement in the science itself as it does for a lack of recognition and support on the part of those who would be most benefited by an intelligent application of the principles of the science. Therefore it is a part of our duty as professional men to make known through proper channels what veterinary science has to offer that is of value to mankind.

If animal tuberculosis is so prevalent upon our farms and in our dairies, if it is a menace to public health, and if it is such a tremendous undertaking to eradicate the disease from our farms and dairies, let the facts be presented to the International Congress on Tuberculosis at Washington, D. C., in September, or else let the profession forever after hold its peace.

What in the name of common sense is the use of appropriating hundreds of thousands of dollars of public funds to build and maintain great sanitariums for people suffering with tuberculosis, and at the same time maintain bovine tubercular factories all over this broad land, where millions upon billions of tubercular bacilli are constantly being propagated and disseminated to mankind through the infected products of these diseased animals? The wonder is not that tuberculosis is so prevalent among mankind, but rather at the *great resisting power of man to the infection*. Even if the disease were not communicable to man, yet

it is a mighty poor thing to be consuming the products of diseased animals. Agricultural and economical considerations alone are sufficient to warrant the eradication of animal tuberculosis from our farms and dairies.

The International Congress on Tuberculosis will afford a forum where every phase of the problem may be considered. The Congress is divided into seven independent sections. Professor Leonard Pearson, Dean of the Veterinary Faculty of the University of Pennsylvania, will preside over the section on "Tuberculosis in Animals and its Relation to Man." It is earnestly hoped that he will be ably supported by those in the veterinary profession who have given most study and attention to animal tuberculosis and its communicability to man.

By paying a fee of \$5.00 any worthy veterinarian may become an active member of the Congress, attend the sessions and take part in the proceedings. He will have an opportunity of listening to lectures by distinguished foreigners, inspect the pathological exhibits and receive all literature and reports issued by the Congress. This is the place for the veterinarian who is interested in the restriction and extermination of tuberculosis to make his influence felt. The members of the sister professions—human and animal medicine—must get a little closer together if the best interests and welfare of the public are to be conserved. It is a friendly co-operation that will bring the best results to the people.

The International Congress on Tuberculosis at Washington, D. C., September 21-October 12, 1908, will, without doubt, afford the best opportunity the world has ever known for the consideration of animal tuberculosis in its relationship to man. By taking advantage of the opportunity you will not only be promoting the advancement of veterinary science among the learned professions but you will be contributing your share towards safeguarding mankind from infection of animal sources.

W. H. L.

NECESSITY FOR VETERINARY INSPECTION OF ANIMAL FOODS FOR HUMAN CONSUMPTION.

It is estimated that there are in Greater New York 6,700 practitioners of human medicine, 510 of whom wear petticoats. It is astonishing that the services of such a large number of physicians should be required. An explanation may be found, for a large proportion of the illness of the people, if we but stop to investigate and consider the unsanitary and unhealthy conditions under which much of the animal food supply is produced and sold. Competent veterinary supervision and inspection of all dairies and abattoirs, as well as of the milk and meat supply, together with other animal food products, would in itself reduce human misery, suffering and death more than any other one thing that the Health Department could do for the people of the metropolis.

It is no exaggeration to say that the interests of the public health and welfare demand that this work be placed under competent veterinary direction, where it properly and rightfully belongs. A man, to cope intelligently and successfully with a problem of this character and magnitude, requires not only rare executive ability but must possess a broad and practical knowledge of veterinary science and animal husbandry. Governor Hughes, in his recent message to the New York Legislature, points out the necessity for legislation to safeguard the Empire State from tuberculosis and other dangerous animal diseases. Now let New York match Pennsylvania.

W. H. L.

VIVISECTION CONTROVERSY.

The establishment of a Rockefeller experimental farm near New Brunswick, in the State of New Jersey, has aroused the hostile opposition of a lot of senseless anti-vivisectionists who have designated the place "Hell Farm."

The REVIEW believes that there is nothing too severe to say in condemnation of the brutal cruelty of the unthinking, unsci-

entific dabbler who sometimes maltreats animals for no worthy purpose. It would also place every possible safeguard around all animal experimentation for the purpose of preventing unnecessary pain or cruelty even to the lower forms of life. It finds, however, no warrant or justification for the condemnation of vivisection as conducted by trained scientific observers. On the contrary, such scientists are seeking knowledge that is of incalculable benefit to mankind as well as to the animal kingdom in general. Their work and methods are invariably most humane and they deserve commendation rather than condemnation.

If all information, that has been derived through experimentation on live animals, were blotted out the retrocession would be tremendous. If all animal experimentation were suddenly stopped the progress of modern scientific medicine would be arrested and paralyzed.

W. H. L.

INVESTIGATION OF THE VETERINARY SERVICE IN THE UNITED STATES ARMY.—President Roosevelt's order requiring riding tests of army officers and his instructions to the Secretary of War relative to the establishment of remount stations, etc., are bringing about commendable results.

The REVIEW would like to see the President take his big stick with him and investigate the deplorable condition of the veterinary service in the United States army, with the lack of organization and consequent inefficiency that exists therein. Such an investigation would do more towards the enactment of legislation making provision for the establishment and maintenance of a veterinary corps, and give the veterinarian the rank which he is entitled to, than could otherwise be accomplished in a decade.

RECENT DATA IN VETERINARY SCIENCE.—So many of our readers have become interested in Professor L. A. Merillat's epitome of recent veterinary knowledge commenced in the December REVIEW under the title of "Recent Data in Veterinary Surgery," that we have decided not to continue to restrict our

able collaborator to what is purely surgical, but, on the other hand, to allow him all possible liberty to expound whatever he may discover in science which may be of interest or concern to practitioners of veterinary medicine. Therefore we discontinue the use of the title of "Recent Data in Veterinary Surgery" and publish Professor Merillat's contributions under the broader heading of "Recent Data in Veterinary Science."

DEPUTY STATE VETERINARIANSHIP.—Our reference in the January REVIEW to a Deputy State Veterinarianship being open to a veterinarian with the requisite qualifications caused a landslide of inquiries to pour into the REVIEW office from all parts of the continent. We would like to have sent a personal reply to each personal letter received, but this would have been a physical impossibility, so we take this means of addressing all who addressed us and of advising them that their letters and applications were all promptly forwarded, in batches, to the proper party, and that the matter is now entirely out of the jurisdiction of the REVIEW. We trust the best man may get the position.

W. H. L.

TO REPLACE the barn in which twelve valuable young trotters by McKinney, 2.11¼, were burned last spring, Mr. William Simpson is building at Cuba, N. Y., a fireproof concrete stable 350 feet long and 60 feet wide. This will probably be the most perfect structure of its kind on any stock farm in the country.

HEARING ON LABELING OF CATTLE FOODS AND MEDICINES.—The Board of Food and Drug Inspection will have a general hearing on the labeling of stock and cattle foods and medicines in Washington, at the Bureau of Chemistry, on Monday, February 10, 1908, at 10 a. m. This hearing is to be held in order to give all those who are interested in the manufacture, sale and hence the labeling, of these products, an opportunity to meet with the board and discuss the whole subject thoroughly, the board thus obtaining their views prior to the promulgation of a decision on this subject.

ORIGINAL ARTICLES.

THE PLACE OF VETERINARY MEDICINE IN STATE EDUCATION.

D. ARTHUR HUGHES, PH. D., D. V. M., INSPECTOR, SUBSISTENCE DEPT., U. S.
ARMY, CHICAGO.

A paper read at the 44th Annual Convention of the American Veterinary Medical
Association, Kansas City, Mo., Sept. 10-14, 1907.

The German poet, Heinrich Heine, somewhere in his writings, importunes men not to neglect to hearken to the Zeit-Geist, the Time Spirit, if they are to make their energies potential in their day and generation. For my part I do not pretend to have anything of prophesy in me, nor come I from a "school of the prophets." Hence I do not dare to predict what the honeyed future may have in store for us. Nevertheless, the part of wisdom is to consider what the politicians call "the issues of the day," which, for us, are the veterinary issues of the day, leaving to posterity the fruits of our labor.

Of all the questions which vex us, governmental and legal ones most concern us. Look at them! The military veterinarian has not his right status; for the reason given that the government does not yet appreciate his full worth. Fakirs and quacks are abroad in the land; for the reason given that state governments do not put an iron hand on them. Practitioners in the States are not at all sufficiently protected, because of the reason given that the State Legislatures have not passed adequate laws. Veterinary sanitary police work in the States is insufficient; for the reason given that legislative authority granted to us is wanting. Many of the States make no provision for the training of veterinarians; for the reason that the legislatures are yet dead as door nails to its necessity.

If it were not that the American Government, from its foundation, has stood fast for public education; if it were not that

agricultural education was knit, by Congressional enactments, into the warp and woof of that public education; if it were not that, in those fundamental Congressional Acts, veterinary medicine was mentioned as a cardinal subject for training; if it were not that veterinary science has thus found its place in the State agricultural education adopted, I would be able to find no reasonable ground for hope that veterinary science would shortly find a larger scope in the several States, and that, eventually, most of them would have veterinary courses in their State institutions for the training of veterinarians. But veterinary medicine has found its place in State education. At least nine States, New York, Pennsylvania, Ohio, Michigan, Kansas, Iowa, Colorado, Washington and Alabama, have declared themselves prepared to train their own veterinarians. As many more States could be named, which, by virtue of the commendable zeal of their veterinary leaders, at the State Colleges or Universities, have veterinary courses even now, which, when taken together with collateral sciences electable at the same institutions, would give a better training than that obtainable in some "recognized" veterinary colleges, though these State institutions have not yet declared themselves ready to train their own veterinarians. I refer to such States as Virginia, Texas, Missouri, North Dakota, Minnesota and Wisconsin. The signs of the times point to the establishment of full veterinary courses in these or other State institutions where the field is ripe for a change. No other governmental question, therefore, more deserves the attention of this assembly than that which constitutes my theme, "The Place of Veterinary Medicine in State Education."

This brings me to the proposition I wish to advance this morning, namely, that it is the duty of each State to train its own veterinarians; to define the conditions under which they shall be allowed to enter upon veterinary work within the State, or remain in that work; to defend their interests by legislative enactment.

Through the leavening effect of the work of men of this profession, the conviction is becoming deep-seated in the minds of

the American people, in many of the more enlightened States, that veterinary education should be free; that veterinary knowledge should be imparted at State institutions; that a degree in veterinary medicine should be conferred; and that professional men should be turned out therefrom to treat farm animals. To show you that this view is not chimerical, I point to the fact that the State of Michigan has, within a few weeks, empowered its Secretary of Agriculture to start a veterinary department, in connection with its famous College of Agriculture, and a course leading to the veterinary degree. Earlier in the year, Alabama and Colorado did much the same thing, both of which will establish veterinary courses leading to the degrees in 1907. It is patent that, in so doing, these States were only doing their bounden duty to the agricultural interests. A survey of the present tendencies in public education in the United States will discover to any thoughtful man that State veterinary education, whereby men will be trained for work within the States, will be accomplished: either by adding a Department of Veterinary Science at the State Agricultural College, as in Iowa, Alabama, Colorado, Michigan, and Washington; or by establishing a separate State Veterinary College under the Trustees of the State University, as was done in New York and Ohio; or by adding a Department of Veterinary Medicine at a State University, as was done in Pennsylvania.

State veterinary institutions, moreover, seem at present to receive the smiles and blandishments of fortune; whereas she refuses just now to coquette with any other form of veterinary school. It is conceivable that private veterinary schools might be placed beyond criticism, even by a man like Dr. Merilatt who knows them so well, provided they could be made the recipient of a large endowment from philanthropists, in the same manner as great schools of human medicine have been endowed. Their fortune being assured, from interest on endowment and student fees, they might be able to pass muster, even before the eye of the acutest critic. If this could be done, every man in this

assembly would throw up his hat with joy. I would throw up my own hat, higher than any one. Unfortunately, as far as I can learn, not one of them but must depend upon student fees for existence, for all have yet failed to successfully appeal to the purse of the rich. On the other hand, the library of the State Veterinary College of New York received \$15,000 from the estate of the late Governor Flower towards its endowment, and the Veterinary Department of the University of Pennsylvania recently received \$150,000 from a private source, money which was promptly used to aid in the erection of a magnificent pile of buildings suitable for the Veterinary Department, towards which the State has given additionally \$200,000. In other words, the idea of State veterinary education appeals to the rich as well as to the general public.

These fortunate events do not come haphazard. They are the result of untiring labors of zealous veterinarians, who count no professional effort as loss, but who press onward towards the materialization of their ideals in the foundation of State veterinary institutions to stand as monuments to their renown for veterinary learning and in veterinary education. Therefore, it was to our credit that, a few years ago, we made Dr. Leonard Pearson our Chief Executive Officer; it was a graceful tribute to his zeal that, last year, we raised Dr. James Law to the presidency of this association. Both are exemplars of State veterinary education and the immediate cause of the fortunate events of which I have just been speaking.

The foundation of State veterinary schools, in one form or another, comes as the fruition of many kinds of endeavor.

My study, for the last eight months, of the subject, "What the several States are doing for the furtherance of veterinary intelligence and education," has convinced me that, through its encouragement by the Morrill Land Grant Act, the Hatch Act and the Adams Act, of every kind of agricultural education and investigation, the National Government has, among other things, been, in a large way, cultivating and fostering veterinary intelligence in the States royally and with lavish hands. Through the

Federal funds, disbursed to each State by virtue of these Acts, the States have been enabled to provide teachers of veterinary science in State institutions, investigators of veterinary science in the Experiment Stations. Scholastic and popular State veterinary education has grown up. Through the *scholastic* veterinary work, at the Agricultural Colleges, thousands of students yearly have received a more comprehensive view of the field of veterinary science and its purposes. Through the *popular* State veterinary education, by the medium of popular veterinary publications and the lecture platform, the remotest parts of the States have been reached by veterinary intelligence. Thus it has come to pass that the Professor of Veterinary Science at the State institutions has become a person whose opinions have been weighty in veterinary legislation.

But the Federal veterinary agencies, so acceptable to the States, have not been the only causative factor in the upspring of professional veterinary courses in State institutions. The history of each State shows that, where fakirs and quacks abounded, graduate veterinarians soon appeared to displace them. As time progressed State veterinary associations were founded, shortly gained in numbers and power, which became virile and coercive in the State legislature. Thus, by agencies at work along many avenues, State legislatures have come to voice State needs in the foundation of professional veterinary courses in State institutions. However, when all these lines of force are about to have definite effect in legislation, one man usually stands out as leader, or immediate cause of legislative enactment, Law in New York, Pearson in Pennsylvania, Glover in Colorado, Schoenleber in Kansas, Nelson in Washington.

In contrast to this, we have the proposed State veterinary school in Chicago, which, report says, is to come into existence under the auspices of the University of Illinois, the land and buildings for which are to come from the packing firms, the financial support from the State of Illinois. Here a State veterinary institution springs into being as the result of a national movement making for reform in the packing industry. The en-

deavor is to put to silence that European criticism of American veterinary inspection, which may have been sincere, by the foundation of a school to train veterinary inspectors for the public service, in the centre of the American trade, unhampered for money, under State control.

Whatever way the end, State veterinary education, is accomplished, matters not. Overtures have been made, by at least three private veterinary schools, to be taken over by the State, but in only one case were they successful. The reason for this is that the States usually prefer, for the sake of economy and expediency, to open departments of veterinary science leading to a degree in State Colleges or Universities already founded. Hence the chances are, as illustrated in the case of Michigan, that it is easy to bring about the foundation of a veterinary department in a State Agricultural College, which thereby becomes more useful to the animal industry of the State. Whether the course be established in a State Agricultural College, or in a State University, in country or city, the same end, in the long run, is gained; for the veterinary course established will be considered equivalent to any other course of similar grade in the institution and would be conducted with the same dignity. When State veterinary education once becomes established, the relation of the State to the veterinarians trained by it is altered. The bearer of a State diploma would likely be the recipient of professional favors and preferences. The State vouches for the diploma and the man.

However, additionally, it is the duty of each State to define the conditions under which men shall be allowed to enter veterinary work within the State, or remain in that work, and to defend their interests by legislative enactment. It is the sovereign right of the people of each State to declare, through its legislative representatives, who shall be the proper persons to practice veterinary medicine and under what terms. This cannot be determined, as in France or Great Britain, by national legislation. We have, here in America, no right granted in the Federal Constitution, permitting Congress to found veterinary

schools, as has been done in France, expressly to fit veterinarians for general practice or whatever other veterinary work to which they may wish to turn their hand. However, though the question has never seriously arisen in the American daily press, it would be permissible for Congress to found and endow national veterinary colleges for the purpose of supplying efficient men for the Departments of Agriculture or War, for the veterinary inspection service of the Department of Agriculture or the Army, or, for that matter, to educate regimental veterinarians. There always will, therefore, be differences between the law granting right to practice veterinary medicine in one State, and that in another. The dissimilarity is inevitable, because of differing conditions in the animal industry of each State, and because of different evils to be met by the law. Nevertheless, the movement for State veterinary education will have a tendency to lessen the evils against which veterinary practice laws are usually directed; while, at the same time, it dissipates the present disparity between the States when a man, legally registered in one State, wishes to practice in another.

The two chief evils against which veterinary practice laws are directed are: first, quackery, the ignorant and barbarous practice of entirely incompetent men upon sick animals; second, lesser incompetency, the exclusion of men, much better prepared than quacks, but whose knowledge, judged by the veterinary standards of the State concerned, is not sufficient to warrant their being permitted to practice. The preparation of men, through veterinary education in State institutions, for work in the State, means that the State recognizes the ignorance prevailing, its duty to supply men for practice, and the necessity to safeguard its flocks and herds through veterinary enlightenment radiating from its own institutions. Where State, professional, veterinary education is not conducted, we are apt to find an elysium for quacks and lesser incompetents. With the establishment of State veterinary education, and its growing strength, we are apt to find strong veterinary practice laws and war to the

knife against quackery and lesser incompetency. This is the reason, for example, why Kansas, this year, with one hand gives \$70,000 for a veterinary building at its State Agricultural College, and with the other, a veterinary practice law to control the ignorant. This is also the reason why Michigan, this Spring, one day passes a veterinary practice law, the next makes way for a full veterinary course to be established at the State Agricultural College.

Far be it from me to declare that State veterinary education is a panacea for all evils found in veterinary practice in the several States. Yet it is tenable that, when public sentiment in its might is once aroused in a State at the danger of allowing ignorant men to pass judgment in case of animal plagues, or to tamper with animals in disease, reforms inevitably ensue. The only rational conclusion to be arrived at is that the State control practice, educate veterinarians for its public service, and make all amenable to the penalties for breach of the law.

Furthermore, anyone who has studied such a book as that by Francis M. Thorpe, formerly Professor in the University of Pennsylvania, "The Constitutional History of the States," which is an authority on that subject, or has made a simple comparison of the Constitution of one of the American States with that of another, will know that there are great differences in the expression, in State Constitutions, of what are believed to be State rights. In the formation of law, therefore, relating to veterinary education and practice, the people of one State will, in the exercise of their sovereign power through legislation, express very differently their desires than those in another. This is the reason why there are many differences in the practice laws, why each State may choose the place where State veterinary training shall be conducted, whether at an agricultural college or other State institution, and why the courses offered would differ. For the same reason, just as the States, as a rule, do not allow a man with a medical diploma from a medical school outside the State, or a license to practice in another State, except in certain

exigencies, to practice in their own State until he has passed their own examination, so also it is not to be supposed that a veterinary medical diploma or license acceptable to or granted in one State will be acceptable in another. The veterinary medical laws will always be stricter in some States than in others, just as medical laws are stricter in one State than in another.

Notwithstanding that, State veterinary education tends to the equalization of veterinary courses in one State and the other, and so to bring about that *entente cordiale*, that *concordat generale*, which we all so strongly wish. The professors in the State institutions, who give all their time to their students, and are under obligation to the State to bring them up to its veterinary standards, will train the men according to the most recent methods in the veterinary art, and in the most recent veterinary knowledge. *With the provision of adequate funds by the States, eventually, the veterinary institutions of each State will differ but little the one from the other; nor will students of one State institution be much to be preferred over those graduated in another.*

It matters little, in Great Britain, whether a man has taken his veterinary course in the Royal Veterinary College, Dublin, the Royal (Dick) Veterinary College, Edinburgh, the University of Liverpool, or the Royal Veterinary College, London—the entrance requirements for each are the same, the courses substantially the same, the requirements for practice the same, and each man receives the appellation, M. R. C. V. S., when he has passed the final examinations. It matters little, in France, whether a man has had his veterinary training at Alfort, Lyons or Toulouse, for matriculation, curricula and requirements for license are uniform. It matters not, in Germany, whether a man has been trained in the Veterinary High School of Giessen, Hanover, Strassburg or Berlin, as the requirements in each are similar. In each of these countries the secret of uniformity is that it has been accomplished by national legislation; this is true, at least, in Great Britain and in France.

In America the Central Government has no authority to bring about such a uniformity, nor even similarity, in veterinary matriculation, curricula, degree and requirements for practice. The American Veterinary Medical Association contains most of the master minds of the American branch of the profession. But the moral force which we can exert to foster our ideals in regard to raising the standard of veterinary education in America has the same weakness as that found by historians and students of statecraft in the Continental Congress at the time of the War for American Independence, 1776. We cannot coerce; we can only show the need for change, not impose our ideas, individually nor collectively, on the States. We lack effective authority. However, we have moral force, and that is much. We should use it to originate legislation for the foundation of State professional veterinary education, being assured that the moral force thus spent will bear fruit a hundredfold as time goes on. The educational ideals of the American Veterinary Medical Association can be best expressed in the encouragement, through the agency of strong State veterinary medical associations, the puissance of the press, the might of public speech when occasion offers, the subtle and engaging influence of conversation with men in authority, of the foundation of veterinary departments in State institutions, in which the matriculation requirements, curricula, requirements for graduation and right to practice, may be equivalent to those at the better State veterinary institutions already established. When once established, the force of popular sentiment within the State in favor of State veterinary education, fostered by the State veterinary association and the exhibition of mental and moral energies, grandly displayed, through the obligation of the veterinary teachers to the State they serve, will be sufficient stimuli to assure the production of veterinarians of the right stamp in each State.

THE unlimited opportunities of the veterinary profession are attracting many students. The McKillip Veterinary College reports an enrollment of 340 students.

VETERINARY HYGIENE APPLIED TO THE PROTECTION OF MAN AGAINST ZOONOSIS.

BY DR. SILVIO J. BONANSEA, MEXICO, D. F., MEXICO.

Presented to the Thirty-fourth Annual Meeting of the American Public Health Association.

I have the honor to present to this learned association, a brief paper relative to the establishment of a sanitary service of veterinary hygiene, which would be adjusted to the last discoveries of science, and if wisely applied would undoubtedly be of great benefit to public health.

I refer to a service of sanitary visits to be made for the inspection of milch cows, milk and fresh or preserved meats, that on account of the present hygienic requirements and the new discoveries in science, have greatly increased in number and require to be inspected in order to secure their purity and good qualities from a hygienic and sanitary point of view.

I earnestly beg the learned members of this association to fix their attention on the many and important benefits which can be derived by the public hygiene and health, through the services of a veterinary and hygienist physician, a specialist in this important branch of service, who would contribute greatly to the different ramifications of progress that have been made in the field of veterinary hygiene, and the application of which exercises a direct influence on the hygiene of man.

The establishment of a sanitary and hygienic service, such as I refer to, is of the greatest importance to public health, if we reflect on the many and serious diseases which are daily communicated to man through the direct or indirect channel of animals, of milk, of fresh or preserved meats, which are used as human food.

We all know that milk and meat are the fundamental elements of good food. Meat occupies the first place, because it is an azoade matter, nourishing and easily digested, and which on

account of the conformation of the human system which adapts it to this food, has become an absolute necessity for his maintenance, provided that it is good and sound.

Unfortunately, milk and meat are substances that easily undergo alteration, and as they may proceed from sick animals, they are frequently improper for use as food, and highly dangerous to public health.

Unfortunately, it is only too true that milk, besides the common and inoffensive bacilli, of lactic acid, of coli, etc., of the residues of animal and vegetable substances, only too frequently contain the specific agencies of tuberculosis and typhus. The struggle against bovine and aviary tuberculosis, should be undertaken to protect the public health which is threatened by the enormous and increasing diffusion of the Koch bacillus.

Civilized nations felt the supreme necessity of protecting themselves against the serious injuries which are suffered by towns, when they are fed with infected or decomposing meats and milk, and hence the establishment of veterinary and sanitary inspection.

I would call special attention to the very important work of the veterinarian, and also to the fact that his chief duty does not consist in the cure of animals, but in the prevention of disease. The veterinarian should be considered rather as a hygienist than as a therapeutic, because as adviser of the cattle breeding establishments, and in view of the advantages of public and private hygiene to the public welfare, by giving warning of and stamping out enzootic, epizootic, contagious or infecto-contagious diseases that are transmissible from animals to man, he becomes an important factor in public hygiene and a protector of the public health.

The veterinary hygienist can no longer be looked upon as a simple doctor, because if as a hygienist and bacteriologist he must be learned and foresighted, seeing that as sanitary inspector he holds the lives of the people in his hands, he is also under the great responsibility of preventing the transmission of infectious diseases to man.

The indisputable utility of the veterinary inspector is always proven, more by the sequestrations that he every day makes in the great cities, in the sanitary inspections of meat, in the slaughter houses and butcher shops, of the milk, fish and preserved or salted meats, packing houses, etc.

It is useless to say that up to the present date there is no class of the community which can secure its health against the serious dangers of infectious diseases, as no one can live apart in such a manner as to escape from the infections that directly or indirectly may reach him from the domestic animals unless he exercises the strictest vigilance on those animals, as well as on the milk and meat which he consumes.

Hygiene charges itself with combating the causes of the disease, not only some but all the causes of disease, and it will not give up its task until it has realized that noble purpose, or until men die a physiological death. It is evident that this purpose can be reached and that it must not only form the sublime aspiration of medical science on the part of physicians and veterinarians, but also of all sociologists, as all other social prosperity is useless, when the object of all is wanting, that is to say, health and life.

It is now the general conviction that amongst all the adulterable food, the action of animal food is that which most frequently exercises a fatal influence.

There are innumerable cases of malignant pustule that have been observed in men through having handled carcasses or simply skins of animals that have died of anthrax.

How many cases of tuberculosis have been caused in man through the consumption of meat and milk from tuberculous animals?

We also frequently see cases of transmission to man of actinomycosis, smallpox, pyaemic affections, septicemia, etc. The cases of rabies are too well known for me to make any reference to them here.

Only too frequently do we read of cases of infection of men through the eating of diseased meats. How often do we see in

the butcher shops, meats which present signs of incipient putrefaction, and that nevertheless are sold to the public. I would remind my hearers that there is great danger in eating putrid meat, which is liable to cause poisoning, because such meats contain ptomaines, toxic alkaloids, etc., in a high degree. It has been proved that acute diseases render meat dangerous as food, because in those diseases fever supervenes and we know that during a fever, besides the products of progressive metamorphosis which accumulate in the tissues, products such as creatine, acetinine, uric acid, hyoxantine, etc., alkaloids or leucomaines, are formed, which can poison a system whose renal and hepatic functions are defective.

We thus see that a strict hygiene should exclude from human food all meats which proceed from animals that have died of any disease, even though it may not be either infectious or contagious. There are many cases of poisoning amongst men, which are due to the consumption of meats proceeding from animals that have been attacked by different diseases, such as sero-fibrinous, peritonitis (Rost); puerperal fevers (Hartenstein), epizootic afta (Strose), infectious pneumo-enteritis in hogs (Ponchet, Strobel), diarrhoea in calves (Krueger), mastoiditis (Gerla) and other traumatic inflammations in which the exudations become septic.

Special note should also be taken of those meats, which although cooked do not lose their infectious quality, such as the meats which are infected by the spores of the anthrax, of tetanus, of bovine septicemia, of the tuberculous bacillus, as according to the last studies of Dr. Calmette, it appears proved that even sterilized milk is capable of transmitting tuberculosis. Those germs have been found in a state of perfect activity, in pieces of a kilo weight which had been infected after boiling for an hour and a half.

I make no mention of the many parasitic infections, such as trichinosis, cisticercosis, equinocosis, psoriasis, exanthemic disorders, which frequently and easily affect the man who eats insufficiently cooked food.

In his analysis, Petri found the germs of hog cholera alive in hams that had been salted for a month and in the smoked meats after they had been prepared for three to five months.

We must also take into account the fraudulent sophistications and alterations that are made by butchers, packing houses, and milkmen, who care little for the public health.

It has been demonstrated that in order to remedy these evident and serious evils, and to prevent serious infections in the community, it is urgently necessary to institute a veterinary bacteriological and sanitary inspection of meat and milk which are sold to the public, as well as for the sanitary inspection of milch cows.

The veterinary inspection is necessary in modern communities, seeing that the veterinarian who is charged with the inspection of the animals and of the meats in slaughter houses and butcher shops, studying the origin, and propagation of such animal diseases as are transmissible to them, examining the original causes, will be in a position to propose to the superior authorities, the reasonable sanitary measures which ought to be taken for the prophylaxis of such diseases, for attenuating their ravages, limiting their diffusion and preventing their reappearance.

A true prophylaxis of transmissible disease cannot be obtained without the full scientific knowledge which is furnished to us by the general etiology of those diseases. For this reason it is necessary that the slaughter house inspection should be entrusted to a competent and well trained specialist, because the execution of the measures which relate to public hygiene, require a special study, and a technical ability which cannot be reduced to a simple bureaucratic visit.

In the field of veterinary and sanitary police, as well as in that of the inspection of milk, fresh and preserved meats, will be included all the parasitic, contagious, infectious, zymotic, bacterial or microbial diseases, against which public hygiene should warn mankind.

The medical veterinary sanitarian, by virtue of his special acquirements is under special obligations, either through his technical knowledge, or as the delegate of the administrative authorities, and also as the adviser of private people and cattle breeders. He occupies an important position, even in the political and national economy, seeing that the scarcity of cattle implies an increase in the price of milk and meats, a question that now greatly occupies the Mexican market.

In view of the many causes which may deteriorate, poison or infect milk and meat; of the trade which is carried on in sick animals; of the imperfect sanitary inspection of the slaughter houses, butcher shops, dairies, packing houses, and other similar establishments; of the continuous and serious danger which threatens the community, of contracting serious diseases through the direct or indirect contact with animals, I ask this learned and humanitarian Public Health Association, to encourage the following enactments:

- 1st. International laws of veterinary sanitary police.
- 2d. That the national veterinary sanitary police should at once commence a campaign against the principal infecto-contagious diseases of an endemic character, which can be transmitted from animals to man.
- 3d. That steps be taken for the establishment of sanitary stations in which to isolate sick or suspected animals, which present symptoms of infecto-contagious diseases.
- 4th. That technical, competent and trustworthy persons be charged with the inspection of the slaughter houses, butcher shops, dairies, and other establishments for the sale of animal food.
- 5th. That a special laboratory of veterinary sanitary bacteriology as applied to hygiene, should test the purity and condition of meat and milk.
- 6th. That a strict watch be kept over the milk, because it is the most appropriate vehicle for the transmission of many and serious diseases to man.

I have considered it of great interest to public hygiene, to submit the above propositions to this learned association, which if well applied, would be of the greatest benefit to humanity. I hope that these propositions may be carried out in a practical way, and that a public officer be appointed in every town, to protect the public health, because "*salus populi suprema lex.*"

PIGEONS SUPPLANT TELEPHONE.—Carrier pigeons are doing the work of the telephone for a country practitioner who resides in a quiet town in the State of Maine. When the doctor opened his office he had a telephone put in, but he soon found that it was not of much advantage in his practice, for there were only two telephones among his constituents. He ordered the telephone taken out and now some fifty carrier pigeons bring the messages to him from his patrons. The doctor is becoming popular by reason of the unique manner in which his services can be obtained.

CANNED MEATS.—In a paper before the International Congress for Hygiene and Dermography, held in Berlin, Dr. Dosquet-Manasse called attention to the fact that, by the present method of canning meats, etc., we obtain, it is true, desirable products, but that they are not free from germs and products of decomposition. There has, however, been a great improvement in the canning industry since the change from the old antiseptic process, which altered the natural properties of the meat, to the new aseptic method.

According to the experiments of Dr. Dosquet, the meat is, while in the steaming boiler, perfectly free from germs. The difficulty is that in its progress from these boilers to the cans it becomes again inoculated. It is, however, possible to prevent this reinfection, by conveying the still hot steamers through a large tubular passage into a room in which the air has been filtered free from germs. In this room, exposed only to filtered air, a special machine cuts the meat into regular pieces, weighs it, and fills it into previously disinfected cans. By this process it is possible to can meat so that it retains its full flavor; to work up the cheap meat of the German colonies, and to hasten the process of packing, which is, of course, of great importance to the army and the navy.—(*Scientific American.*)

OBSERVATIONS ON TEXAS FEVER.

BY WARD GILTNER, D. V. M., *Assistant State Veterinarian, Auburn, Alabama.*

It is a common belief that young milk-fed calves possess an almost absolute immunity from Texas fever. A partial explanation of this resistance lies in the fact that the food is animal, not vegetable, and with the change to vegetable diet the resistance gradually disappears, unless the infection of the calf takes place in such a manner that an active immunity is established before a severe attack of the disease occurs.

The following report is of a case belonging to Dr. Cary and treated by him, the writer assisting at the post-mortem held before the students of the veterinary college. A grade milk-fed Hereford calf, three weeks old, from dam infested with ticks (*Margaropus annulatus*), lost appetite, had high fever, and was given drench of magnesium sulphate. Died the night before September 20, 1907. Post-mortem: Animal lightly infested with stages of *M. annulatus* just after and preceding second molt. Body in good condition; visible mucosæ icteric; subcutaneous and peritoneal fat very yellow; muscles pale; blood thin, reddish, not easily coagulable. The heart contains a small clot in the left cavity and numerous ecchymoses in endocardium of left ventricle; liver enlarged and infiltrated with bile, cholecyst full of yellow flakes suspended in bile and mucus. Spleen greatly enlarged, about 15 inches long, the pulp soft and possessing the characteristic blackberry jam appearance. Kidneys congested; bladder full of port wine-colored urine, a sample of which the writer collected in a sterile flask and has now in the pathological museum at the Veterinary College. I was able to demonstrate the *P. bigeminum* in smears from the heart muscle, liver, kidney and spleen stained with Wright's stain. They were numerically far less than found in these same organs from older animals dead of Texas fever.

I have been unable to obtain any reliable records relating to the finding of the *P. bigeminum* in very young calves. The following from Dr. Schroeder¹ illustrates the condition of this phase of the subject: "Some investigators assert that even very young calves may become affected, and that the organism of Texas fever has been found in the bodies of foetal calves. These assertions, however, are contrary to the observations made at this station. Our investigations specifically indicate that calves when first born are practically immune from Texas fever, and that the susceptibility to the disease develops later on and increases with age."

Another interesting and practical side of Texas fever investigations is the determination, qualitatively and quantitatively, of the *P. bigeminum* in the cutaneous blood of the so-called immune southern cattle, in many of which no one has ever seen any symptoms of the disease. To show the status of our knowledge of this condition, I can do no better than again quote Dr. Schroeder²: "The number of Texas fever parasites in the blood of immune cattle is very low. After a microscopic examination of several thousand stained cover glass preparations, only two or three were found in each of which a single parasite could be detected." From the article to which reference was first made the following is extracted: "The pear-shaped bodies under high magnification seem to have a distinct internal structure, the definition of which even with the best magnification is not sufficient to give a perfectly clear impression of its character. It is this form of the micro-parasite that has been seen in the blood of southern immune cattle in the few instances in which the parasites have been detected after a long and laborious search in thousands of preparations of blood under the microscope."

My efforts to find the piroplasma in cutaneous blood of native immune cattle have been successful in the following case

* 1. Notes on Cattle Tick and Texas Fever, 22d Annual Report, B. A. I.

2. And experiment in blood and serum injections in connection with Texas Fever. Investigations, 16th Annual Report, B. A. I.

only. A negro's cow in poor condition was brought to the clinic suffering from suppurative mastitis. A moderate infestation with *Margaropus* (*Boophilus*) *annulatus* was noticed. After several weeks' treatment the udder was amputated, and on November 30, 1907, a blood examination was made after which the animal was slaughtered for anatomical demonstrations. No evidence of Texas fever were found at the post-mortem. The results of the blood examination were: Hb. 50 per cent.; erythrocytes, 4,000,000; leucocytes, 15,600; lymphocytes, 35 per cent.; large mononuclears, 6 per cent.; polynuclears, 59 per cent. The leucocytosis is readily attributable to the mastitis. In making the differential leucocyte count blood smears on glass slides were stained by Wright's method and a total of 500 leucocytes counted. While making this count, two erythrocytes were found containing the double pear-shaped form of the piroplasma, the description of which corresponds to that in the above quotation. The perfectness of these specimens was noted by a scientist connected with the zoological division of the Bureau of Animal Industry.

The study of the blood of southern immune cattle has been almost entirely neglected. The only other differential leucocyte count which has been recorded was made by the writer September, 1906, from a fatal case of Texas fever. "An incision was made entirely through the skin near the root of the tail and no blood exuded for nearly a minute. When at length it did appear it trickled out slowly, having the appearance of a weak solution of eosin, without clotting. Hb. 30 per cent., red cells 2,000,000, white cells 1,620, lymphocytes 2.6 per cent., large mononuclears 3.0 per cent., polynuclears 94.4 per cent." ³

3. Bulletin 141, Alabama Experiment Station.

It is said that Prof. E. B. Wilson, of the Medical Department of Columbia University, is conducting an elaborate series of experiments upon the lower animals with a view of ascertaining what factors influence the determination of sex.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

TYMPANITES OF THE GUTTURAL POUCH.

By A. T. KINSLEY, M. Sc., D. V. S., Kansas City Veterinary College.

November 5th, 1907, a nine-months-old mare colt was presented to the clinic of the Kansas City Veterinary College for treatment. The colt had run with the dam on pasture all summer. During the summer colt distemper was prevalent in the



vicinity and one or two animals in the same pasture were afflicted, but if this colt was affected it never showed any inconvenience from the attack.

A swelling in the throat region was observed by the owner about the first of July. The swelling became more marked and the colt was materially inconvenienced while sucking, frequently staggering back and at the same time extending the head on the neck and projecting the nose in inspiratory attempts. A well

marked swelling could be observed on both sides extending from the base of the ear to a point about four inches below the angle of the inferior maxilla, as is shown in the accompanying illustration. The swelling was not sensitive. A tympanic resonance was obtained on percussion. By pressure the swelling could be diminished and finally would completely disappear.

The condition was diagnosed tympanites of the guttural pouch, resulting from an obstruction of the opening from the pharynx into the guttural pouch. The obstruction being almost complete, the air gradually accumulated and by its pressure tended to close the small opening. The air could be readily forced out by pressure but gradually accumulated again so that there was as marked a swelling within 30 minutes to an hour after as there was before the air was forced out.

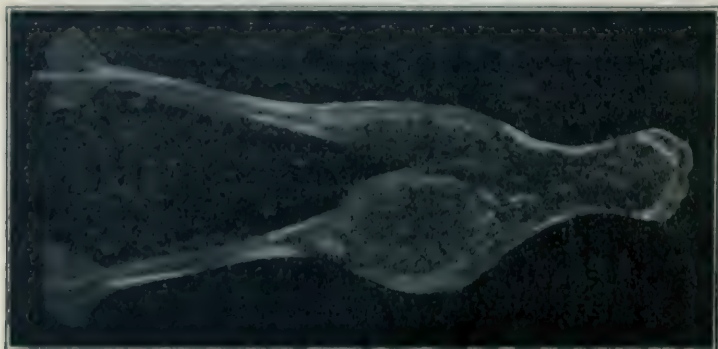
The colt was confined upon an operating table and the guttural pouch opened through Viborg's triangle. The margins of the natural opening into the guttural pouch were found to be firmly adherent with the possible exception of a small space. A counter opening was made from the guttural pouch to the pharynx.

The colt made a good recovery.

OSTEITIS.

By A. T. KINSLEY, M. S. C., D. V. S., KANSAS CITY VETERINARY COLLEGE.

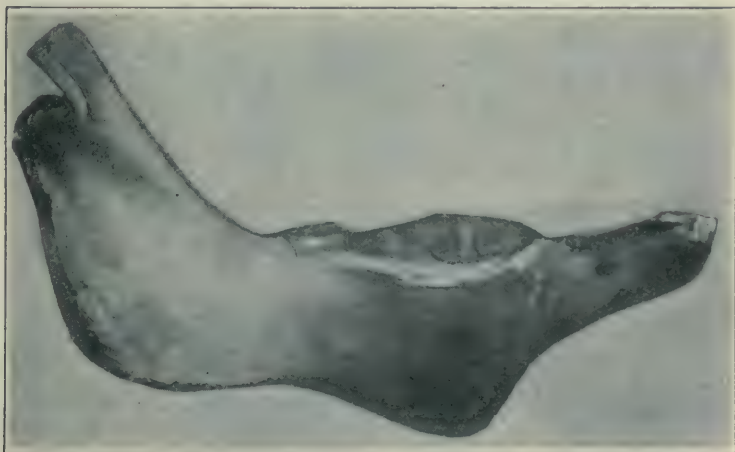
A small growth was observed soon after foaling on the inferior surface of the right lower maxilla of a colt. The growth



INFERIOR MAXILLA OF COLT, SHOWING DEFORMITY DUE TO OSTEITIS.

gradually increased in size until it was impossible for the colt to masticate, and the owner consented to its destruction. The entire head was removed by Dr. Jameson, of Paris, Kentucky, and expressed to the Kansas City Veterinary College.

The soft tissues were carefully dissected away and a growth about the size of a cocoanut was found in the right inferior maxilla (see the accompanying illustrations). The eruption of the temporary molar teeth of the right inferior maxilla was materially disturbed. In the location of the second temporary molar there was an immense mass of tissues projecting upward beyond the normal level of the teeth and it had interfered with the erup-

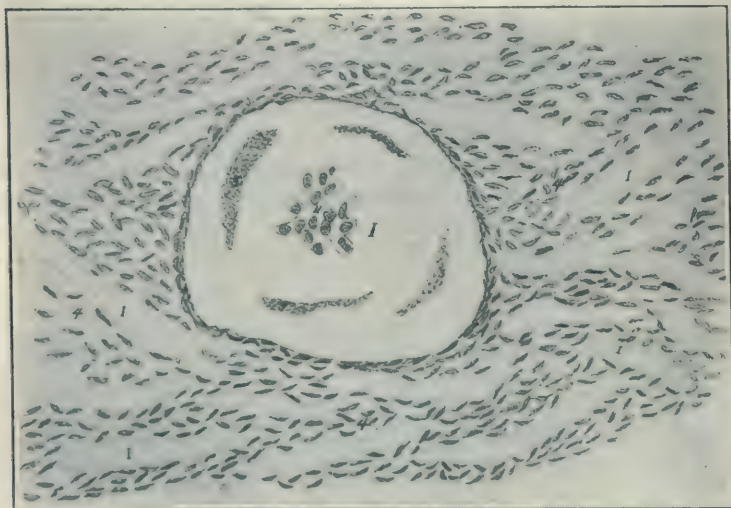


LATERAL VIEW OF INFERIOR MAXILLA OF COLT, SHOWING DEFORMITY DUE TO OSTEITIS.

tion and development of the teeth of the superior maxilla. This growth was inseparable from the osseous tissue and was continuous with the tissue of the enlargement in the maxilla. The tissue of the new growth as well as the tissue of the maxilla was practically devoid of mineral substance.

Microscopically the new growth tissue was found to be composed of fibrous tissue practically throughout with small necrotic centers here and there. A considerable number of fibers as well

as the blood vessels had undergone a hyaline degeneration (see illustration).



- 1 Hyaline Degeneration of Vessels, and Perivascular Structures.
- 3 Fragments not yet Rendered Hyaline.
- 4 Connective Tissue Cells.
- 11 Vascular Endothelium.

From a study of the gross specimen and the microscopic sections it was concluded that the condition was a chronic inflammation.

A NOTE ON THE OCCURRENCE IN AMERICA OF CHRONIC BACTERIAL DYSENTERY OF CATTLE.

By Prof. LEONARD PEARSON, University of Pennsylvania, Philadelphia.

On a small farm in eastern Pennsylvania a disease of cattle has been known to occur for several years with the following characteristics: An occasional mature cow, and usually a young one, will develop diarrhoea from no visible cause and while subsisting on the same food as that upon which the other cattle of the farm are thriving. The diarrhoea develops progressively. At first there is noticeable increased softness of the faeces. In

the course of a few weeks the *fæces* become quite soft and are voided frequently. For a long time the appetite continues to be good, but, notwithstanding, the cow declines gradually in condition; there is loss of flesh, harsh coat and inelastic skin. Gradually, the appetite diminishes, and after a few weeks or months the cow will eat very little. A change of food sometimes appears to give temporary relief and this is especially noticeable when an affected cow is placed on pasture in the spring; the animal may improve for a time and may even appear to have recovered, but later in the season or the next winter the diarrhoea will return and the cow will die. Medicines given internally as stringents, laxatives, tonics and antiseptics produce at most only a little, temporary relief. The disease progresses steadily and the animal becomes thinner, there is marked muscular weakness, and, finally, the cow dies while in a state of extreme emaciation and exhaustion.

The course of the disease, including the periods of partial recovery, may be as long as two or three years, or as short as two months.

In the case of the herd referred to it was suspected that the cattle were tuberculous. The tuberculin test was applied and not one cow reacted. At different times a few of the advanced cases were killed. No lesions were found that furnished a satisfactory explanation for the marked disturbance during the life of the animal. The most that was detected was what appeared to be the effects of chronic intestinal catarrh.

After the publication of Bang's paper on "The Chronic Pseudotuberculous Enteritis of Cattle" in October, 1906, it occurred to me that the baffling disease that we had studied so unsatisfactorily might be the same as that described by Bang. This view was strengthened by McFadyean's discussion of this disease in his journal in March, 1907.

It was not, however, until December of last year that it was possible to obtain a suitable case for study. The cow was sent to the Veterinary Hospital of the University of Pennsylvania. It was extremely emaciated. The mucous membranes were pale; the temperature was normal; the appetite was very poor; the *fæces* were voided frequently, in small quantities, and they were of dark brown color, of the consistency of molasses. The cow died during the second week of her stay at the hospital, and, as

it happened, while I was out of the city. The post-mortem examination was made by Dr. John Reichel, who reported some thickening and an unusual amount of corrugation of the mucous membrane of the large intestine, including the rectum. Some small red points, streaks and patches were seen, especially at the summits of the ridges of the mucous membrane. Dr. Reichel was requested to stain scrapings of the intestinal mucous membrane as for tubercle bacilli. He found quantities of acid-fast bacteria in clumps and isolated, which he will describe.

Another similar case was reported to me by Dr. W. H. Ridge, Trecose, Pa. In company with Dr. Ridge, I examined this cow January 26th. The cow was a pure-bred Jersey, 5 years old, raised on the farm. She was thin and weak and had had diarrhoea for nearly a year. She was killed for post-mortem examination. Briefly, the necropsy showed slightly increased color of the outer surface of the colon and of the posterior portion of the small intestine. The mucous membrane of the large intestine and especially of the cæcum and of the anterior portion of the colon was thickened slightly, was rather firm, less elastic than normal, and was thrown into unusually well-defined folds and ridges. Upon the ridges there were scattered red spots, usually quite small and sometimes made up of distinct fine lines. These small areas of red color were few in number and widely scattered. The small intestine was similarly affected, but to less extent. Only the posterior two-thirds of the small intestine appeared to be involved. The mesenteric lymphatic glands were slightly enlarged, and the cut surfaces were moist. The liver was a little red in color and abnormally firm. Specimens were taken to the laboratory for examination. Dr. Reichel stained scrapings from the mucous membrane of the large intestine from the mesenteric glands and from the liver. He found, in all of these locations, acid-fast bacteria, a little shorter and, relatively, a little thicker than the bovine tubercle bacilli. These organisms were especially numerous in the mucous membrane of the large intestine. Additional bacteriological and pathological studies are being made.

There appears to be no doubt that the disease here described is the same as the disease found by Johnie and Frothingham in a cow at Dresden in 1895. It was their opinion that the cow might have been infected with avian or with attenuated mammalian tubercle bacilli. Acid-fast organisms resembling tubercle bacilli were found diffusely infiltrated in the mucous membrane

of the large intestine. Only a few of the scattered cases were reported until Bang made his researches which were published in 1906. On account of the resemblance of the causative organism to the bacillus of tuberculosis, he called the disease a pseudo-tuberculosis.

In the last number of the REVIEW, Professor Liautard gives a summary of some of the recent observations in regard to this disease under the title of "Chronic Hypertrophic Enteritis." McFadyean suggests the name of "Johne's Disease." None of these names appears to be free from serious objection, and I suggest, tentatively, that the name *chronic bacterial dysentery of cattle* be applied.

There can be no doubt that the disease is infectious and some experimentors have succeeded in transmitting it by feeding fæces and hacked fragments of diseased intestines.

Upon looking back, I can recall a number of herds that I now believe to have been affected with this disease. Some of the herds were large and the losses were great. After tuberculosis, as the cause of the bad condition of the cattle, had been excluded by the tuberculin test, the difficulty was thought to have been due to faulty dietetics or bad hygiene. But the disease occurs persistently in some herds, under conditions that these hypothesis cannot be maintained. After discussing this matter with Dr. Ridge, Dr. Marshall, Dr. Conard and others, there appears to be little room for doubt that this disease is a rather widespread infection and that cases of it have not heretofore been recognized because the lesions are so slight. It is transmitted so slowly that its contagious nature has been difficult to determine. The latter fact, however, is not so remarkable when we consider that tuberculosis prevailed for centuries before it was known to be a contagious disease. Some of the so-called cases of chronic hemorrhagic septicæmia of cattle may be found to be cases of bacterial dysentery.

The lesions that occur in chronic bacterial dysentery of cattle are not in proportion to the severity of the symptoms. Since the loss of condition commences in an early stage, and while the animal is still eating well, it seems to be probable that in addition to the disturbance of assimilation, there is an intoxication that produces emaciation. I have seen calves emaciate similarly when inoculated intravenously with cultures of avian tubercle bacilli that were incapable of producing tubercles.

FIBRO-SARCOMATOSIS WITH RESULTING ASCITES IN A FOWL.

BY WINFRED B. MACK, VETERINARIAN AND BACTERIOLOGIST, UNIVERSITY OF
NEVADA.

An adult white Leghorn hen (*Gallus domesticus*) was presented at my clinic for examination. The owner had noticed that she was out of condition for several weeks. For a few days she had refused food, and her condition had gradually grown worse. Comb and wattles were cyanotic, feathers ruffled, there was marked depression. Abdomen largely distended. By paracentesis we removed 450 c.c. of fluid from the abdomen. This fluid was murky, lemon-colored, specific gravity 1014, opaque, contained numerous flocculi, and a few leucocytes. On standing the upper portion cleared somewhat. Coagulated loosely on boiling. Gave positive albumen tests by the heat, cold nitric acid, Millard-Roberts, picric acid, and potassium ferrocyanid methods. Gave negative sugar tests by Fehling's, and the bismuth methods. Microscopic examination and cultures showed that it was sterile.

Attempted treatment, but she died the following day.

Autopsy—The autopsy showed emaciation, subcutaneous edema of the ventral surface around the seat of puncture. The entire mesentery was firm and fibrous, so that the intestinal folds were separated with difficulty. The intestinal walls and all the viscera showed marked congestion. The ovary was a firm, fibrous mass inside, the larger ova soft and dark-colored. The wall of the oviduct was filled with firm, grayish-white, tubercle-like nodules about $\frac{1}{2}$ mm. in diameter. There was a firm, grayish tumor about $2\frac{1}{2}$ cm. in diameter in the upper oviduct that cut with difficulty. Liver dark and friable, normal in size. The pancreas appeared firmer than normal. The intestinal walls were thickened, the gizzard wall about $\frac{1}{4}$ normal thickness. The kidneys were engorged and friable. There were several masses of coagulated, fibrinous material in the abdomen with a total weight of $17\frac{1}{2}$ grams. The cardiac walls were thin. Intestinal contents were a dirty brown color, containing numerous yellowish masses of partially digested food. The cloaca was filled with semi-fluid material containing a large amount of urates.

Portions of the liver, kidneys, ovary, oviduct, tumor from the oviduct, duodenum and pancreas, ileum, and caecum were fixed in mecuric chloride solution, sectioned in paraffin, stained with haematoxylin and eosin, and examined microscopically with results as follows:

Microscopic Examination.

Liver—Blood vessels engorged, fibrinous exudate into the tissue, especially near the engorged vessels, with beginning parenchymatous degeneration in the infiltrated areas.

Kidney—Marked engorgement of the blood vessels, with some parenchymatous degeneration of the tubular epithelium.

Ovary—The center of the ovary was a dense mass of fibrous tissues, containing numerous areas of cells of an embryonic connective tissue type which we consider sarcomatous. The capillaries were engorged with blood with numerous sarcomatous areas of from one or two to a large number of cells in their immediate vicinity.

Oviduct—Wall somewhat thickened; marked congestion of blood vessels; numerous sarcomatous areas, corresponding to the small nodules observed at the autopsy.

Tumor from Oviduct—The tumor consists of bands of dense fibrous tissue, braided together with adematous areas between the bands and areas of round (sarcoma) cells quite numerous, most marked in proximity to the blood vessels.

Duodenum and Pancreas—The pancreas appears normal, doubtless its firmness observed on autopsy was due to the firm, fibrous character of the tissues surrounding it; the mesentery is thickened, with sarcomatous areas throughout. All blood vessels show congestion.

Ileum—The attached mesentery has an increased amount of fibrous tissue with sarcomatous areas. Congestion marked.

Blood—Unfortunately we were unable to secure a blood count before death owing to the unfinished condition of the laboratory. A film was secured and stained by Wright's method. There was apparently no leucocytosis. There appeared to be a decrease in the lymphocytes and but very few of the cells containing spherical eosinophile bodies and mast cells were observed. Apparently the large mononuclears were increased and by far the most numerous cells were the plyncuclears. This

would at first appear like leucocytosis, but the percentage of leucocytes to red blood corpuscles did not appear higher than in films of blood from healthy fowls.

Summary.

The condition may be thus summarized: There was a generalized malignant tumor growth of fibro-sarcomatous character, apparently originating in the ovary or oviduct, spreading by metastasis throughout the generative system and the mesenteric circulation, causing a thickening and hardening of the tissues, marked venous stasis, extensive ascites, cachexia and finally death.

EPIZOOTIC GANGRENOUS DERMATITIS.

BY J. FERGUS DONNELLY, V. S., ST. JOHN'S, NEWFOUNDLAND.

Last month we had our first snow, which necessitated our street car company to place salt upon the track in order to prevent the ice from forming. This salt, after a time, would become mixed with the snow, and, of course, being an astringent, would contract the skin of the fetlocks, which, after a time, would cause them to crack; then, of course, dirt containing germs, would enter them, thereby producing the following symptoms:

Through these cracks could be seen a very purulent discharge which, after a short time, gave forth a terrifically obnoxious odor, and if not taken in hand immediately it would spread and run up the leg, causing the hair to fall out and the animal to keep the leg off the ground. If you happened to touch it he would raise it in outward position, keeping it so for some time.

Some cases I have been treating, both fore and hind legs were affected in this manner. The pulse would usually be about 50 degrees, temperature 103.4 degrees.

The treatment that I have been using for this is as follows:

Wash the legs well with a 5 per cent. solution of creolin, then poltice with hot bran, changing same every four hours, and

then apply some of the following ointment, which is rubbed well in between each poultice:

R

Plumbi acetatis	}	aa	.....	3i
Plumbi carb.				
Pul. camphora	}	aa	.....	3ss
Ol. eucalypti				
Lanoline, add			.....	3vi
				M.

One of the following powders to be given in feed twice a day:

Calci sulph.	}	aa	3ii
Potassi iodidi				
Ferri sulph.				
Fenugreek				
				M.

From this treatment I have obtained the best success, and, providing I can get those who are attending to the animal to carry out my instructions, I usually regain resolution from 2 to 3 weeks. I have treated, to date, 25 cases of this disease, and every day I am receiving new ones.

I would be very glad if any of your numerous subscribers who have had experience with this disease would communicate with me. The trouble is very prevalent here now (Dec. 30, 1907).

TRICHINOSIS.

By C. VANDER CLOCK, M. D., PASSAIC, N. J.

I beg to report to the AMERICAN VETERINARY REVIEW an interesting case of trichinosis (caused by the ingestion of pork containing trichina spiralis).

Christina P., age 14, of Italian parentage, residing in Passaic, N. J.

Has always been in good health; family history negative.

Was taken sick three weeks ago with nausea, vomiting, diarrhea, vertigo and menorrhagia with a great deal of pain in the abdomen. She was sent to the hospital, where I saw her. Temperature, 103 F.; pulse, 140; respiration, 34. Extreme con-

traction of the flexor muscles of the thigh and arm, which gave a great deal of pain when endeavoring to extend the thighs or arms.

A blood smear was sent to Dr. Sandt, of Paterson, the hospital parthologist, and in his report found 35 per cent. of eosinophiles in the blood and on examining the stools about 70 per cent.

This morning (January 16, 1908), she developed a great deal of edema of the face and pain over the pectoral and intercostal muscles. Temperature, 99 2/5; pulse, 148; respiration, 36.

There is also some retraction of the neck.

AS THERE is no indication that the microscopical examination of pork for shipment to foreign countries will be resumed, the appointments of the Assistant Microscopists of the Bureau of Animal Industry have been terminated.

THERE are seven hundred and eight abattoirs and meat packing establishments in the United States under the surveillance of the officials of our National Bureau of Animal Industry. This gives employment to a small army of veterinary and other inspectors.

WE await every issue of the REVIEW with the keenest interest, and feel that to it the veterinary profession owe the deepest gratitude for its constant battle for the upbuilding and education of our profession.—(*Spencer & Healey, Veterinary Surgeons, San Jose, Cal.*)

TROTTING HORSE INTEREST.—Statistics recently compiled by the Department of Agriculture at Washington afford striking evidence of the magnitude of the trotting horse interest in the United States. From information collected by the Bureau of Animal Industry it is shown that the whole number of registered horses of all the recognized breeds is about 308,000. Of this number no less than 195,000 are trotters, the light harness horses far outnumbering thoroughbreds, hackneys, French and German coachers, Percheron, Shire and Clydesdale draughters, Shetland ponies, saddle bred horses, etc., all combined. When it is remembered that probably not one standard bred trotter in five is ever registered the full significance of the government statistics is apparent, and it seems a fair estimate to say there are at least 1,000,000 trotting bred horses in the country.

RECENT DATA IN VETERINARY SCIENCE.

(Continued from January REVIEW.)

By Drs. LOUIS A. AND EDWARD MERRILLAT, CHICAGO, ILL.

Pneumonia—Although this disease may seem an alien amongst surgical items, it is too important to pass unnoticed in the review of modern medical research, and, besides, it too often appears as a dreaded complication of surgical treatment to be entirely ignored.* *Pneumonia* of the debilitated surgical patient, embolic pneumonia complicating local septic conditions and pneumonia supervening the administration of inhaled anæsthetics are as vital as they are frequent and conspicuous in a surgical practice. The surgeon cannot ignore pneumonia even though its treatment belongs to the practitioner of medicine.

A recent writer in the *Journal of the American Medical Association* lucidly defined pneumonia as "An inflammation provoked by an exuberant growth of certain bacteria in the pulmonary alveoli." Wadsworth (*Med. Rec.*, Sept., '06) cites the fact that croupous pneumonia is nearly always a *specific* pneumococcus infections but that in broncho-pneumonia and in secondary pneumonias the streptococcus is usually the predominant agent. The pneumococci are parasites of the healthy mouth, being found in a very large per cent. of all individuals, and they are very frequently associated with other bacteria in pathological conditions of the upper air passages. Coughing and sneezing sends them through the air, where they are inhaled into the lungs of susceptible subjects. Cold, to which attacks of pneumonia are so frequently attributed, is not so frequently causative as was once supposed. The disease is more prevalent in the winter months because it is the season when crowds congregate and when the majority of individuals lead a crowded, in-door existence, in contradistinction to the more healthful out-door life of the "good old summer time." Soldiers in camp in the winter do not contract pneumonia whilst children housed in a warm, crowded school-room may suffer from an epidemic of the disease (Baldwin, *Lancet*, July, '06).

The pneumococcus as found ordinarily in the mouth and air passages of healthy persons is but feebly virulent and it only becomes pathogenic when the susceptibility induced by systemic

* See Editorial on Recent Data in Veterinary Science.

enfeeblement becomes pronounced. Thus, extreme fatigue, drunken brawls, long exposure to cold in which the body is chilled through and through, and in fact any of the numerous excesses to which the body is recklessly committed to endure, are etiologic; but these elements would not alone cause pneumonia if the bacteria were not present to avail themselves of a favorable soil for growth.

The experiments of Palier have shown that the feebly virulent pneumococci of the human mouth are made highly virulent by inoculation into mice, which are highly susceptible animals. In fact, it has been frequently proven that by passing the feeble virulent microbe of the human mouth through lower animals the virulency is markedly increased and the new culture become manifestly pathogenic for man or any susceptible animal. It has thus been surmised, also, that the house mouse may be a much more important factor in the causation of pneumonia than has ever been suspected.

Treatment—"Pneumococcus infection of the lungs manifested by local and general symptoms cannot be aborted by drugs. If one who depends upon drugs would see that the patient has a maximum of fresh air, good excretion from the bowels, skin and kidneys and proper nursing, he would cease to give drugs as a routine or for specific effect" (Billings, *Prac. Med., Series*, 1907). Waugh (*Med. Rec.*) recommends aconite, digitalis and veratrin to control vaso-motor changes. Galbraith (*Jour. Am. Med. Assn.*) believes in a warm bath, purgative of calomel and sodium phosphate, large doses of quinin and then the immediate use of tincture of iron. The quinin is given in doses of 60 to 75 grains, followed in an hour with 30 to 40 grains. If the temperature does not yield this "stuffing" process is continued. If the stomach rebels chloretone, pepsin or guaiacol will "mend" it. Calomel as a purgative and aconite, digitalis and strychnine as vascular correctives seem to be the most popular medicants of modern physicians who still defend the use of drugs for pneumonia. The pro-drug contingent does not seem to be in the minority, although the highest authorities seem to ignore medication for the more rational hygienic management of the affected subject. The fresh-air or rather the cold-fresh-air treatment is gaining much favor. The patient is practically exposed to out-door air by "excessive ventilation" while the body is kept warm with clothing. It is in reality an open-air treatment. To these must be added the serum treat-

ment for the antipneumococcic serum is now a reality, but up to the present it cannot be claimed that the rate of mortality has been reduced by its use. The technical objection to this mode of treatment is that serum is the product of a single microbe while pneumonia may be due to different bacteria, or as is sometimes the case, to an association of different ones. In short, the anti-pneumococcic sera of to-day are uncertain, and in effect the serum treatment as a whole is immature.

Next to tuberculosis, pneumonia is easily the most momentous problem before the medical profession. The apartment house, the family hotel, crowded public conveyances, the steam-heated dwelling, and, in fact, all conditions of modern life that tend toward the congregation of people, together with an ever increasing density of population, is having a telling effect in increasing pneumonia, while on the other hand there has been no corresponding improvement in the treatment. In fact, there is no specific treatment; it kills or it aborts spontaneously; human interference seems fruitless.

In domestic animals pneumonia is likewise an important disease, although the mortality in the larger species is much lower than in man. In *bovids* it may truthfully be called a rare disease as compared with the frequency in all other mammals, while in *pores* it very often occurs in a severe epidemic form, simulating outbreaks of swine plague (A. T. Peters, address before the Illinois Vet. Med. Association, Dec., '07), from which it is easily differentiated by the experienced diagnostician. The small *laboratory animals* are highly susceptible to pneumococcic pneumonia and the microbial flora of the affected lungs is very virulent for any other receptive species. In *equines*, croupous pneumonia is neither very contagious nor very fatal. Indeed, it is regarded so innocuous that quarantine is seldom practiced by veterinarians, and a favorable termination is usually predicted. The mortality is low. Pneumonia due to direct irritation of the air passages by smoke, flame, drugs, food, pus, etc., is never found to spread from an isolated case. On the other hand, broncho-pneumonia complicating influenza is very contagious, often spreading from animal to animal with great rapidity and generally with increasing severity. In this form the death rate is high. The role of the pneumococcus in all of these different forms of the disease has not by any means been satisfactorily explained. The research of veterinary pathologists indicates that mixed and especially streptococcic infections are more often

causative than pneumococcic infections. Much remains to be explained about the lauded specificity of inflammation of the lungs in animals.

In bovinds it may safely be called rare, especially when compared with the frequency in the foregoing species.

The most important question concerning infectious pneumonias of the horse to-day is the *mode of probagation*. This particular hygienic problem, once solved and successfully coped with, would in the case of so-called *shipping fever* alone be the means of saving annually thousands of dollars in lost horse flesh. Veterinarians have thus far done practically nothing towards its solution despite its importance. So far as we aware not a single laboratory experiment has been conducted in this country to this significant end; and few, if any, clinical observations have ever been reported which would tend to throw light upon how infectious pneumonias spread from animal to animal when an epidemic is once started. *Do the animals inhale the infection or do they ingest it?* Is the air of the stable contaminated with the causative microbes or is the fault to be found with the feeding troughs or the watering places? These are questions of great moment, of immense concern; they are consequential to an exceptionally high degree. If we failed to touch upon them we would be committing a sin of omission even in this brief reference to pneumonia.

Attempts to experimentally infect animals with diseases by way of the air passages have seldom been successful; the lungs usually reject artificial infections while the digestive tract takes them with great facility. Cadeac (1887) exposed 40 rabbits daily to dust previously surcharged with tubercle bacilli and only one of them ever became infected with tuberculosis, and Calmette only recently proved that colored dust could not easily be made to penetrate the air passages as far down as the lungs; it was rejected by the various repulsing forces of the respiratory apparatus before it reached the small bronchial tubes and alveoli. Guerin, in *Annales de l'Institut Pasteur*, 1906, showed that tuberculous infections by inhalation in reality reached the lungs *via* the digestive tract after being first rejected into the pharynx and then swallowed with the saliva.

These are only a few of many facts that might be enumerated here to show that in the case of pneumonia, like in glanders, like in tuberculosis, the digestive route of dissemination should be given some consideration. After the many clin-

ical tests and the still greater number of experimental proofs, ail the world now bows to the digestive route as the chief portal of entrance of the glanders and of the tuberculosis microbes. It is now well known that in young animals bacteria of all kinds traverse the normal intestinal mucous membrane unhindered, to lodge first in the pulmonary capillaries and without effect on the mesenteric lymphatics. It seems that in young animals the channel from the external world to the lungs *via* the digestive tract, thoracic duct, right heart and pulmonary artery, is a free, open one, until such time as the organism becomes automatically vaccinated against microbial invasion. May this not account for the prevalence of infectious pneumonia in the young (unacclimated) horses and the practical immunity of adults? Pecus (*Rev. Gen. de Med. Vet.*, Dec. 15th, 1907) relates some very salient experiences in this connection among horses in the French army. By special arrangement of the watering troughs (and by cleanliness of them) whereby young horses, convalescents, distemper cases, etc., received their drink entirely separate from the older (acclimated) horses the epidemics of infectious pneumonia were methodically controlled.

These are important hints for the American veterinarian to ponder over.

Opsonins—Opsonins and the opsonic index, which, during the past two years, have attracted so much attention from pathologists, have hardly been mentioned in veterinary literature. Our search for any reference to the new substances called "opsonins" in veterinary publications has been in vain. Such an excellent work as Kitt's "Comparative General Pathology" (which the publishers date 1906), contains no hint of their existence, and in our own work, "Principles of Veterinary Surgery," the manuscript of which was prepared during the same year (but which the publisher dates 1907), only a page and a half is devoted to them. The reason for this apparent delinquency is found in the recency of their discovery. Although the word "opsonin" was introduced by Wright in 1903, the opsonic hypothesis was not immediately accepted as a well proven one until the last two years. Now, however, the word "opsonin" seems destined to become as common and as well understood as "antitoxin," which only a few years ago forced itself into the vocabulary of pathological terms.

The word "opsonin" is derived from the Greek *opsono*, which means: *I prepare food for*; and the opsonic hypothesis

aims to demonstrate that an immunized animal combats bacterial invasion by substances (opsonins) contained in the blood serum, which *prepare* the invading microbes for the leucocytes to devour. In a word, opsonins prepared the microbes; leucocytes englobe, engulf, devour, destroy them. The opsonist proposes to artificially supply the blood serum with these substances and thus facilitate the destructive activity of the leucocytes. His highest aim is that of producing *in vitro* or otherwise, for each pathogenic bacterium, an opsonin which can be safely introduced into the living body and thus place the microbe at the mercy of the leucocyte.

Opsonins are hypothetical substances; their nature is not known. It is sufficient to say, in this brief mention of their existence, that they must be differentiated from the *antitoxins* which neutralize toxins; from *stimulins* or *aggressins* which excite leucocytes into greater activity; and from *microbicidal substances* which directly destroy bacteria. The *opsonins* simply sensitize bacteria to the advantage of the leucocytes. *Wright's opsonins prepare the microbes for Metchnikoff's phagocytes to devour.*

The therapeutics based upon the opsonic hypothesis is still in its infancy; it has not been perfected. While many of the ablest experimentalists are lauding opsonic therapy there are some who condemn it on account of its impracticability, and others on account of the inconstancy of the index. At the present moment—January, 1908—the controversy waxes warm. Able workers are found on both sides. Olmacher (*Am. Jour. Surgery*, Dec., 1907) says: "It seems to mark a most important epoch in medical science as it places on a rational basis the treatment of many microbic diseases"; while Evans (*Practical Medical Series*, 1907), on the direct contrary, states: "In the heralded, unlimited field of therapy, where the opsonic index is ordained to play a star role, its utility seems destined to pass into oblivion."

Despite these opposite views which apply chiefly to their therapeutic application, the discovery of opsonins must be regarded as a significant forward step in the study of immunity and pathology in general.

The "opsonic index" refers to the relative amount of opsonins in the blood serum. If the index is low the economy has not sufficient power to oppose the bacteria; if high the bacteria fall prey to the leucocytes and the disease aborts under the influence of their destructive activity. The index represents the rela-

tive amount of opsonins in a specimen of blood to be tested as compared with the amount in normal blood; or, more accurately, the average number of bacteria ingested under the influence of the serum to be tested as compared by the number consumed under the influence of normal serum. The method by which the index is obtained is as follows: If the index of normal blood serum is arbitrarily represented as 1 and it is found that leucocytes under its influence each engulf 30 bacteria, and then under the influence of the blood serum to be tested they only engulf 15 bacteria, the experiment indicates that the tested serum is only one-half normal, hence the opsonic index of the patient from which the tested blood serum was obtained would be 0.5. If only 10 bacteria were engulfed by each leucocyte the index would be 0.3, or one-third normal. Thus the opsonic index of patients may be 0.3, 0.4, 0.5, 0.6, etc., when below normal, or 1.1, 1.2, 1.3, 1.4, etc., when above normal. It may occur that an index as high as 2 or even more may be found in subjects recovering from microbic diseases.

Opsonins are supposed to be specific, although the existence of *common* opsonins in normal blood serum is not denied. Simon (*Jour. Exp. Med.*, Sept., '07) states that opsonins of normal blood are not specific, but that those of immune blood probably are. If each bacterium has its special opsonins then the object to be attained is that of supplying the blood of a diseased subject with an opsonogenic inoculation composed of dead specimens of the species, which is the line of investigation now being followed.

Resistance of the Tetanus Bacillus—The dried spores sheltered from sunlight remain virulent for years (La Blanc). Eisenberg found virulent spores on a splinter two and half years after having removed it from a tetanogenic wound of a man. Kitasato has reported the following results from exposure of the bacillus to chemical substances: (1) It resists five per cent. carbolic solutions for ten hours; (2) it survives three hours' immersion in mercuric chlorid 1-1000; (3) chloroform does not kill it in two days; (4) nitrate of silver 1 per cent. kills it in one minute; (5) the spores resist several minutes' immersion in the following strong mixture: Lugol's solution 50 per cent., carbolic acid 50 per cent. and permanganate of potash 1 per cent.

While these experiments show remarkable results it is only after a study of the resistance to heat that the tenacity of this microbe can be comprehended. The resistance of the bacillus

of Nicolaier to heat is a matter of history, as it is through this characteristic that its specificity was definitely determined by Kitasato. Although Nicolaier is credited with the discovery of the tetanus bacillus the reader should be reminded that he never succeeded in obtaining a pure culture nor in demonstrating that this, and not other microbes with which it is always associated in wounds, is the real cause of tetanus. It remained for Kitasato to isolate the bacillus by the aid of extreme heat which was found to kill all the other microbes of given suspensions except one, and that one proved to be the creature sought. Kitasato found that the spores of the bacillus were not killed by exposure to 80 degrees C. for six hours; 100 degrees (boiling) for fifteen minutes, and 115 degrees for five minutes. It was, however, killed in five minutes at 120, which may be regarded as the resisting point. These facts explain without further comment the tetanogenicity of wounds cauterized with a hot iron, as in caudal amputation, puncture firing, etc., and it also explains how the hot powder of the toy pistol drives the microbes into the dirty hands of the juvenile patriot.

The writer was once criticised for having mentioned puncture-firing among the causes of tetanus. With a laconic smile the critic scouted the idea of a microbe being carried triumphantly into a wound on the point of a hot iron. As a reply to this friendly sophistry, if the resistance of the tetanus bacillus is not ample explanation, then the history of cases unmistakably due to this cause should answer. The hot point of the thermocautery cools instantly upon touching the skin, and with a decreasing temperature as it penetrates; most any microbes harbored in the hair follicles, sebaceous glands or deep layers of the epiderm, might be carried unharmed into the depths of the subcutem. In the case of this anaerobic, resistant creature, the cauterization creates the exact sheltered environment that is favorable to its growth.

ACTINOMYCOTIC BEEF TONGUES.—It has been decided that if there is found no characteristic ulceration or induration of the tongue upon inspection and there is no lymph gland involvement or abscess present there can be no rational cause for the entire condemnation of such food products. Therefore, inspectors of the Bureau of Animal Industry, after the removal of the abrasions, will pass the remainder of the organ for food.

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

BY PROF. A. LIAUTARD, M. D., V. M.

A CASE OF DILATED VAGINA [*Joachim D'Costa, G. B. V. C.*].—A chestnut mare, aged 14 years, was frequently passing wind from the vagina, making a loud noise and also passing a large amount of matter through the vulva. The imperfect history was that she had had a rather difficult parturition about five years before, and since had the present trouble. Examination per rectum failed to show if there was any communication with the vagina. Water, poured in the rectum, was all expelled by the anus and not a drop came through the vagina. At the examination of this organ it was found that the introduction of the hand was abnormally easy, as there was no resistance from any surrounding part, and on pushing the hand well in it felt as if in an empty space, the walls of the vagina neither touching it nor offering any resistance. On the sides the vaginal walls were very thin and attached to the pelvic bones. Above, the vagina almost touched the sacral vertebræ, the rectum itself being on one side. The bladder was felt in its usual position. The internal surface of the vagina was smooth and seemed free from its usual numerous mucous folds. In taking the hand out of the vagina a loud noise occurred, the lips of the vulva flapped and air was distinctly felt entering by the vulva. Discharge of mucus was rather frequent. There was also a constant switching of the tail. The noise was present every time the mare urinated or defecated, when she rolled, trotted or was excited by any noise. The mare was a regular nuisance. The treatment consisted in the administration of extract of ergot, tinct. of nuxvomica and tinct. of zingib. Local application of solution of sulphate of zinc and vaginal injection of cold water slightly colored with permanganate of potash. The animal improved much, but was taken home by the owner before complete recovery, which, however, the author thinks will ultimately arrive.—(*Veterin. Record.*)

SUCCESSFUL CONCEPTION AND GESTATION IN A RED HEIFER AFFECTED WITH IMPERFORATE HYMEN OR IMPERFORATE VAGINA [*Henry Thompson, M. R. C. V. S.*].—Although in practice over 50 years, and having met many peculiar cases of generative troubles, the author has never seen one similar to this. Called to give his attention to a cow, which had calved four days previously, and which was in a very critical condition, Mr. Thompson was told of another animal, which was also in laboring pains and to which he attended as soon as he was through with the first. After washing and disinfecting his hands and arms he made the examination of the second cow, a red heifer. She showed all the characteristic symptoms of parturition, the pelvic bones, ligaments and vulva all relaxed, udder distended, teats pointed, and occasional strong labor pains. On examination per vagina, a complete block was met with about one inch internal to the meatus urinarius. The vaginal passage was entirely obliterated, exactly as is met in cases of imperforate hymen. Examination per rectum revealed the head, fore feet and body of a living calf. After much difficulty the hand was finally introduced into the vagina, one finger first, then another, then the hand finally. Not without difficulty, the calf was at last extracted, unfortunately dead, and the after birth removed.—(*Veterin. Record.*)

A BRAIN TUMOR [*R. Porch, F. R. C. V. S.*].—An ordinary case of psammoma, which at post-mortem was found in the usual position, but had given rise to unusual symptoms. A mare, about ten years old, was found one day lame on one fore leg without any cause accounting for it. She is lamer the next day, and when made to walk she goes a few steps without anything abnormal about her, but then will bring forward the near lame fore leg with a jerk, placing the foot on the ground in front of the opposite leg. There was also a twitching and drawing up of the lip of the near side. On the third day, when an attempt is made to turn her round, she nearly falls down. Trying to back her, she merely moves her body without raising her feet, leaning back till all the weight seems to be upon the hind legs, somewhat like the position observed in laminitis. When forced to go ahead the lame leg is carried so far forward of the other that progression is almost impossible. On the fourth day she stood listlessly in her stall. When annoyed by flies she chased them quite naturally with her hind legs. The twitching of the lip is more marked and amaurosis has set in. It is impossible to

make her back in her stall, and while impossible also to turn her to the off side, she can do so on the near. The same condition exists of the near side fore leg. The hind legs move freely. Finally the mare got down, struggling with her four legs continuously as if she was galloping. She was bled to death. At the post-mortem the tumor was found in the left ventricle and about the size of a pigeon's egg.—(*Veterin. Record.*)

A CASE OF HODGKIN'S DISEASE IN A DOG [*E. Wallis Hoare*].—The history was as follows: The animal was first seen with the report that he had been a delicate feeder. He showed slight enlargement in the region of the parotid gland, but was in fair condition. In about ten days he commenced to pine and showed enlargements of the glands in various parts of the body. Later on there was a swelling in the region of the throat, marked enlargement of the prescapular lymphatic glands, also of the inguinal glands. The enlargements were symmetrical. Marked anemia was also present and an irregular pulse, while emaciation was extreme. Then the region of the neck and throat became enormously swollen and there was total loss of appetite. The animal was destroyed and the autopsy revealed enlargement of the lymphatic glands throughout the whole body, the spleen weighed one pound and two ounces and appeared to fill up a large portion of the abdominal cavity. This enlargement of the spleen had not been observed during life, but might have been, said the author, if more careful examination had been made.—(*Veterinary News.*)

A CASE OF DOUBLE GONITIS IN A HORSE [*Prof. Geo. H. Wooldridge, F. R. C. V. S.*].—Subject an 8 or 9 year old light vanner. He had been lame for some months and was getting worse. He was lame on both hind legs, worse on the near, when standing; the near hind leg was advanced and frequently held off the floor. Stifles were both abducted and crural muscles much atrophied. The tensor fasciæ femoris was rigid and felt as if it was cartilaginous on the near side. A swelling of gelatinous consistency could be felt between the ligaments of the patella on the near side. Nothing appreciable on the off. On walking, motions of both stifles are limited and the toes are dragged. This is more marked when the animal is made to trot. Arthritis of both joints were diagnosed and slaughter advised. Post-mortem: The lesions existed in both joints, but more marked on the near side. On that joint blood stained coagulated synovia was found. Tibia, had no lesions. Cartilage

of the patella reddened but smooth. On the femur both the condyles and the trochlæ were diseased. Cartilages being red, swollen and soft. There were some erosions and lesions of eroding osteitis. There were also two exostoses on the postero-internal border of the condyle. The semi-lunar cartilages were free from lesions. On the right side joint there was no effusion, the lesions were older and less acute. The articular cartilage of both tuberosities of the tibia were eroded, and the tibial surfaces of the semi-lunar cartilage had erosions also. There were none on the inner condyle, but it showed markings that looked like cicatrices. There was also little exostoses on the outer side of the condyle.—(*Veter. Journal.*)

AN INTERESTING DISLOCATION OF THE WRIST [*T. F. Prime, M. R. C. V. S.*].—A small three-year-old terrier, when jumping off a low wall, had overbalanced and fallen 16 feet on the road. It had dislocated the wrist joint, forcing the foot and leg forward so as the part stuck out at right angles with the pad of the foot facing upwards. The animal was put to sleep with chloroform and the dislocation reduced. There was no fracture nor rupture of ligaments or tendons. The leg was put in a tight splint and bandaged. The little fellow made an excellent recovery.—(*Veter. Journal.*)

RUPTURE OF THE RIGHT CARDIAC AURICLE IN A HORSE [*Prof. J. J. O'Connor, M. R. C. V. S.*].—An underbred gelding, aged four years, had a fairly large tumor, botriomycotic in nature, on the lower part of the left jugular groove. He was cast easily, without any particular struggling, and received 5 grs. of cocaine as a local anæsthesia. When the dissection was half done the horse made a sudden convulsive movement with all his limbs and expired. At the post-mortem, while a normal condition of the abdominal organs was found, hæmopericardium, very flabby and fatty heart with a rupture three inches long in the right auricle, and the posterior vena cava torn away from its connection with the heart were sufficient to account for the sudden fatal termination.—(*Veter. Journal.*)

FRENCH REVIEW.

BY PROF. LIAUTARD, M. D., V. M.

FATAL INTESTINAL STRANGULATION BY THE PEDUNCLE OF A MISENTERIC LIPOMA [*M. M. Fyot and Ragneau*].—A ten-

year-old mare is taken with colics. She is subject to them, being an inveterate cribber and wind sucker. This time she has gaseous indigestion, complicated with intestinal congestion. Six litres of blood are taken away from her; she receives an injection of bromhydrate of eserine, an opiate drench; the cœcum is punctured and the mare seems relieved. She urinates, passes a few balls of manure and appears entirely recovered. She has passed a good night, but in the morning has again pains. She has made no manure since the day before and rectal injections are not kept. At examination of the rectum the hand is arrested and drawn out, covered with blood. On a level with the pubic symphysis the floating colon is felt bending downwards and its cavity closed by a twist from right to left, which nothing can overcome. Soon the symptoms are assuming a very severe character and the mare dies after several hours of sufferings. Post-mortem: Abdominal cavity contains about fifteen litres of wine-red colored fluid. Anterior portion of the small intestine distended with gases, the balance of the intestinal mass is more or less congested and contain food mixed with extravasated blood. Everywhere the mucous membrane is thickened and ulcerated here and there. On the entire length of the inferior border of the meso-colon, there are tumors varying in size between that of a nut to that of an apple. One of these floats free in the abdominal cavity, hanging to a peduncle about six centimeters long. Bigger than a man's head, it weighs three kilograms and one hundred grams. By its form it reminds one of a cystic kidney as they are found in cattle. The peduncle had twisted round from right to left on the floating colon and given rise to the characteristic lesions of gangrene. The tumor was a degenerated lipoma.—(*Recueil de Medec. Veterinaire.*)

CLINICAL ANÆSTHESIA OF A CAT MADE IN A PECULIAR MANNER [*Dr. Ducasse*].—A very nervous cat has not been able for three days to take any kind of food, solid or liquid. An examination of the mouth is impossible unless the cat is put under anæsthesia. On the cover of a carton paper hat box several holes are made and in the center a larger window like, are made. The cat is placed in the box, where a pad moistened with chloroform has been introduced. After a few struggles she falls to sleep, the box is opened, the animal pulled out and an examination of the mouth made, revealing that the tongue is immobilized by being enclosed in a cartilaginous ring formed by four tracheal segments of a large hare, which the cat had to eat a

few days before. These were excised with scissors, removed, and the cat, after a few minutes, woke up, sneezed several times, and after half an hour was in its normal condition.—(*Répertoire Vétérinaire*.)

CURIOUS SEQUELA OF AN ACCIDENT OF AUTOMOBILE IN A DOG [*Mr. Lepinay*].—A little fox-terrier bitch was squeezed between the border of a sidewalk and the wheel of an automobile passing. She was not crushed and the accident took place so rapidly that it was almost overlooked by the people surrounding. The dog ran home. The author was called to see her. She had trifling bruises about the body, but was suffering with great difficulty in breathing. It was not altogether dyspnoea, but the mode of respiration gave the impression that there was some mechanical impediment to the perfect execution of the function. The visible mucous membranes were much injected. By auscultation, was detected, on the right side, exaggeration of the respiratory murmur, the beatings of the heart were well felt on the left side, but scarcely perceptible to the ear. No respiratory murmur on the left. Diagnosis of rupture of the diaphragm was suspected. The dog was put on a severe diet, counter-irritation of the chest and brucine. Improvement of some kind showed itself on the third and fourth days. On the fifth respiratory murmurs were heard on both sides. Appetite is improved and a little more nourishment is allowed. After three days all the bad symptoms returned, asphyxia is threatening, and, notwithstanding treatment, the dog dies. At the post-mortem there was found a complete laceration of the diaphragm, with complete displacement, with the heart and lungs displaced by the presence of the largest part of the abdominal organs in the thoracic cavity. Under the low diet the stomach and intestines had emptied themselves and permitted the comparative improvement of the third and fourth days. The increase of nourishment was followed by the intestinal dilatation with the fatal ending of the patient.—(*Revue de Pathologie Comparée*.)

LUXATION OF THE SCAPULO-HUMERAL JOINT IN A HORSE; REDUCTION; RECOVERY [*Mr. G. Joly*].—Luxations of this kind are not exceedingly rare. This is the third case the author has seen in four years. A thoroughbred, aged 11 years, attempted to jump over a low wall. Its right fore leg goes over, but the left leg strikes the wall and the horse remains a few minutes riding the obstacle. He soon frees himself, however, and walks

on three legs. The left fore, flexed at the knee, rests on the toe. The head of the humerus projects downwards and outwards. The animal walks on his three legs to the infirmary, dragging the toe, but without putting any weight on the leg. The animal is thrown, the left leg taken off the hobble and pulled on abduction with two ropes, secured one on the coronet and the other above the fetlock, two strong men are pushing hard upon the head of the humerus, a clapping noise is heard, the dislocation is reduced. The animal was kept laying down for several hours; 80 c.c. of aseptic saturated solution of salt were injected in eight different points round the joint, which gave rise to a large swelling of contention. The horse behaved well, avoiding to use his leg until seven days after the accident he began to walk comparatively freely. The recovery was complete in 21 days and no relapse occurred.—(*Revue Gener. de Medec. Veterin.*)

A CASE OF HYDRATHROSIS OF THE ELBOW [Mr. E. Nau-din].—A heavy draught mare has been lame for a long time on the right fore leg and has become useless. She has been treated for lameness of the elbow joint, blistered, rested and got well. A year later lameness returned. Same treatment is applied, but failed. A swelling appeared inside and below the elbow. It extended to the forearm. It soon increased and the lameness was excessive. The animal refuses to move, the forearm was much swollen on its posterior part. The swelling started exactly from the middle of the forearm, ran upwards to the base of the olecranon. It spread on inside of the leg and raised the pectoral muscles. The tumor was hot, not very painful and gave the sensation of a pouch filled with fluid. It was deeply situated and covered by the cubital and pectoral muscles. Important fact to notice the swelling was not bilobulated, the external surface of the joint was not involved in the swelling. Explorating puncture permitted the evacuation of one and one-half litres of clear yellow fluid. The tumor is cystic or contained synovia, unfortunately it was not carefully examined. The owner declined treatment, and the animal being sent to the butcher, careful dissection revealed the true nature of the trouble: A case of hydrarthrosis of the humero-radio cubital joint of enormous dimension.—(*Revue Veter.*)

BACILLAR PYELO-NEPHRITIS IN A COW AND SECONDARY TRICUSPID INSUFFICIENCY SIMULATING TRAUMATIC PERICARDITIS [Mr. Bergeon].—This cow has been sick for eighteen months and she has been treated by several veterinarians for in-

digestion of the omasum, chronic enteritis, bronchitis and has been suspicious of tuberculosis. She is not in a very bad condition, moves uneasily and stiff, carries her head low. The back is arched but flexible. Respiration accelerated. Temperature 38 degrees, pulse soft and hard to take. The jugulars are enormously swollen and venous pulse well marked. Auscultation reveals nothing characteristic. Rectal examination shows that the two ureters are very large and as big as a strong cord. One kidney is hypertrophied and surrounded with œdematous tissue, depressible on pressure. The cow was slaughtered. Examination of the carcass: Digestive apparatus normal. Liver is a little hard and has sclerotic spots here and there, with lesions of distomatosis. Both kidneys are very large, specially the right; they are three times their normal size; they contain greyish pus and both weigh 8 kilogramms and 320 grammes. The ureters are very big. There was in the thoracic cavity, lungs with passive congestion, pleura and pericardium normal. Heart hypertrophied. The urine was albuminous and contained a large quantity of bacilli of Hofflich, which are considered as the specific agents of the bacillar pyelo-nephritis of bovines.—(*Revue Veterin.*)

ITALIAN REVIEW.

BY PROF. A. LIAUTARD, M. D., V. M.

A RARE TUMOR OF THE MAXILLARY BONE IN A HORSE [*Dr. C. Fonzo*].—The history was that the animal had had a swelling several months before, that had resisted all kinds of treatment. Brought to the clinic of the Naples Veterinary School, the horse has an enormous tumefaction of the inferior portion of the left cheek, which is extending to the maxillary space. This swelling is hard, not warm, and rather painful to pressure. On a level with the inferior third of the ascending branch of the maxillary and at the point, where the growth is most prominent, there is a sore, red at its bottom and the openings of several fistulous tracts, from which escapes fœtid pus. There is profuse salivation and the fluid that flows has a very repulsive odor. In making an examination of the mouth it is observed that the growth interferes with the motions of the tongue and that it occupies part of the lingual canal. The molar

teeth are more or less displaced by the growth, except the last one, because the tumor has not reached it. The process of mastication is impossible and the horse died after a few days. At the post-mortem nothing abnormal was found, all the organs being healthy. The intestines contained a large quantity of gases with a very offensive odor. After preparation a microscopic examination was made. The tumor was an endothelial sarcoma.—(*Giorn. della Real Socie. ed Academ. Veter. Italiana.*)

UPON TWO CASES OF STRANGULATED HERNIA [*Gino Giovannoli*].—A six-year-old stallion is taken with colics, which at the examination prove to be due to strangulated hernia on the right side. The operation is necessary and immediately performed. The left testicle is respected, recovery follows in due time. About two months later the same horse is again taken with colics, and this time his case is one of strangulation on the left side. The animal is cast, disinfected and operated. But the intestine is extensively diseased and the chances far from being as favorable as the first time. Indeed, peritonitis sets in soon and the animal dies. This was the second case that the author has met of two hernias in the same subject. In the first case the animal had the second attack three months after recovery from the first operation. He got well and did good work after. The author concludes that complete costration ought to be always performed, as a second attack is quite sure to occur. The cause of the hernia being a powerful muscular effort with pressure and dilation upon the superior opening of the inguinal canals, these have both been left in the same condition and similar result can take place in both.—(*La Clinica Veterin.*)

ABSCESS OF THE MASTOIDO-HUMERALIS IN A STEER [*Ferranti, Dr. Ferdinando*].—If this affection is rather common in horses its presence in bovines has not been frequently observed. In this case the tumor grew slowly, soon was as big as the two fists of a man, was hard, cold and not very painful. The skin that covered it was sound. It was at the base of the neck at about the width of five fingers from the shoulder joint and precisely in the course of the mastoido-humeralis muscle. The growth was freely incised and emptied of its contents. It required an incision twelve centimeters long to excise the indurated tissues that formed the walls of the abscess. After thorough scraping the wound was closed with stitches, a drain tube being left at the lower part to allow dressing and washing of necrotic

tissues, which might slough out. Recovery was complete in 24 days. Of course the principal interest of this case rests on the fact that it occurred in a bovine.—(*La Clinica Veterin.*)

ARE BANDAGES OR SUTURE OF THE VULVA NECESSARY AFTER REDUCTION OF PROLAPSUS UTERI IN MARES? [*Dr. Gino Giovannolli*].—These various means have been recommended by almost all authors and writers on obstetrics. But for the author there is something more important to do, and which, if properly carried out, will dispense with those methods which are sometimes unsuccessful. For the doctor the important thing is, when one reduces a prolapsus, to be sure that the horns of the uterus are entirely put back in their place and in their position. Five cases are recorded by the author, four in mares and one in a cow, when he had opportunity to reduce prolapsus in various condition, some of which had already been manipulated more or less by empyrics, and by careful attention to a perfect reduction and replacing of the horns, he succeeded in cutting short to any more returns of the trouble. The expulsive efforts of the animal being stopped almost immediately without any medical assistance.—(*La Clinica Veterin.*)

A CURIOUS CASE OF PNEUMODERMA [*Dr. Vittorio Baisi*].—The record of a case of subcutaneous emphysema of the entire body, but principally marked at the neck, head and lips. The animal was considerably deformed although in otherwise perfect health, eating good, with eyes brilliant as far as could be seen, with the largely swollen eyelids. The temperature was normal. Nothing could be obtained in the history of the patient to guide the author as to the cause of the trouble. Only a very minute examination might explain how the air could pass and enter the cellular tissue. By carefully investigating the condition of the air passages and beginning at the trachea, about the middle of the neck, on the tracheal region, in making a digital exploration it seemed as if a deformity of the trachea was found, probably a fracture of a cartilage. And indeed in auscultating over that point a whistling sound was heard, as if air was entering and coming out, increasing at the expiration and diminishing at the inspiration. An incision, ten centimeters long, was made over that spot on the trachea and it was found that a laceration existed between two cartilaginous rings with depression of one cartilage, although this was not fractured. The case was treated as a recovering case of tracheotomy and in a few days the emphysema was all gone.—(*Il Nuovo Ercolani*.)

ARMY VETERINARY DEPARTMENT.

A BILL TO INCREASE THE EFFICIENCY OF THE VETERINARY SERVICE OF THE U. S. ARMY.*

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President be, and he is hereby, authorized to appoint veterinarians in the Army, not exceeding two for each regiment of cavalry and one for each battalion of field artillery.

SEC. 2. That, except as hereinafter provided in sections five and six, no person shall be eligible for appointment as a veterinarian who is not a citizen of the United States, unmarried, between twenty-one and twenty-seven years of age, and a graduate of a veterinary college of good standing. Nor, except as hereinafter provided in sections five and six, shall any person be appointed until he shall have passed a satisfactory examination under such regulations as may be established by the President as to habits, moral character, mental and physical ability, education, professional qualifications, and general fitness for the service.

SEC. 3. That, except as hereinafter provided in sections five, six and seven, each of the veterinarians appointed under this Act shall have the pay and allowances of a second lieutenant, mounted: *Provided*, That after ten years' service as veterinarians, each shall have the pay and allowances of a first lieutenant, mounted: *Provided further*, That, except as hereinafter provided in sections five, six and seven, this increase of pay and allowances shall not accrue until the veterinarian has passed a satisfactory examination as to professional, moral and physical qualifications, under such regulations as shall be established by the President.

SEC. 4. That the veterinarians appointed under this Act shall be on the same footing as commissioned officers of the Army as to tenure of office, retirement, pensions, and increase of pay, and in all respects shall be governed by the rules and articles of war as are commissioned officers of the Army.

SEC. 5. That veterinarians now in the service who have served as veterinarians honorably and faithfully not less than fif-

* Introduced in the U. S. Senate by Mr. WARREN, December 4, 1907, read twice and referred to the Committee on Military Affairs. (S. 654.)

teen years shall be first eligible for appointment under this Act and may be appointed without examination: *Provided*, That if any veterinarians falling within the description of this section shall have reached the age of sixty-four years before the date of the approval of this Act, the President may, and he is hereby, authorized to appoint and immediately retire them.

SEC. 6. That veterinarians now in the service who have served as veterinarians less than fifteen years shall be next eligible for appointment, subject to examination, as provided by this Act, and no subsequent examination shall be required for those so appointed who shall have served as veterinarians not less than ten years at date of appointment.

SEC. 7. That veterinarians now in the service who shall be appointed under this Act shall be entitled to credit for all honorable and faithful prior service in the Army as veterinarians in determining their status under the provisions of sections three, four, five and six of this Act.

SEC. 8. That all veterinarians now in the service who shall not be appointed under the provisions of this Act, shall be discharged from the Army, by the Secretary of War, with three months' pay.

SEC. 9. That all laws or parts of laws in conflict with the provisions of this Act be, and are hereby, repealed.

CRITICISM OF ARMY BILL.

Fort Clark, Texas, Dec. 20, 1907.

I have the honor to submit the following for publication, if you consider that space in your valuable REVIEW can be spared for such matter.

It seems to me that it is up to some one to propose a scheme by which some form of legislation can be enacted which will improve the present status of the army veterinarian, and in that way increase the efficiency of the veterinary service of our military establishment.

Commenting upon Bill S654, to increase the efficiency of the veterinary service of the army, which is at present before the military committee, I beg to state that in my opinion that this bill if passed, will not increase, but decrease the efficiency of the veterinary service, at least at a time when we can ill afford to have anything of the kind take place.

Take for instance Section 8, which means that not only those men that fail to pass a professional examination will be let out with three months' pay, but those who have become disabled in the line of duty will also be turned out to get their livelihood as best they can, in a condition that unfits them physically to follow their calling in the army; how much more so does it prevent them earning a living in civil life where competition is so keen.

Section 7 requires veterinarians now in the army to be re-appointed, and take another examination, which, if passed, puts them on the same status as before taking it.

Section 6. Veterinarians now in the army who have served as veterinarians less than fifteen and more than ten years, can be appointed to the higher grade upon passing one examination. I am not certain about the definition of the word veterinarian, if used in the sense that there were no veterinarians until after the bill which provided for two veterinarians to each regiment of cavalry, etc.; of course there are not at present any eligibles for the higher grade at present; again, if it means the time served by quartermaster employees, first and second class veterinarians and veterinarians, then those veterinarians included in Section 5 of the bill, who have served over fifteen years will be advanced or retired without further examination, this means that the majority of veterinarians who came to the service as second class veterinarians will be advanced to the higher grade, upon the passage of the bill, without an examination; a few who came in as first class will also benefit.

It seems hardly fair or just that the men who first of all came in as second class veterinarians (some of them, it is said, without examination), were raised without further examination to veterinarian and will now be put above the men who passed a harder and higher examination than they did.

It surely cannot increase the efficiency of a service to put the least capable men on top.

The advantages of the bill are retirement with pay, riddance of some undesirables by examination and a few other minor points.

A commission is what must be worked for; it will give the veterinarian and veterinary service a status; to start on the rank of captain would be high enough when men were detailed to act as chief veterinarian of a division or department, temporary rank and pay of the higher grade (lieutenant-colonel, or major) during the detail, which should last two years (or at least a limited

time). The highest rank of veterinarians in some European armies is colonel, with higher temporary rank during detail as director or chief.

In Japan I think the rank of major is given to the veterinarian who acts as chief of a division.

The point in view is a commission; Sections 2 and 3 of bill S 654 gives a good outline as to how to start; the only trouble with it is that a commission is not the object. It is briefly as follows: Sec. 2. Must be a citizen of the United States, unmarried, between twenty-one and twenty-seven, graduate of a veterinary college of good standing, pass an examination as to moral character, habits, mental and physical ability, education, professional qualifications and general fitness for the service.

I think this is all that should be required for a commission as second lieutenant.

Section 3. That after ten years' service as veterinarians, each shall have the pay and allowances of a first lieutenant, after the veterinarian has passed a satisfactory examination as to professional, moral and physical qualifications.

This would be about the right requirements for a commission as first lieutenant, the requirement of at least two year tropical service might be a good addition.

Captaincies might be made by selection from the first lieutenants, after at least five years as such, selected by a board or general staff, details as a chief or assistant chief with temporary higher rank and pay, be made from the captains.

I believe there ought to be three veterinarians to every cavalry regiment, one to each squadron, and a proportionate number in the field artillery; there should also be regular veterinarians for quartermaster's work, and remount details as well as service schools; proportionate number of farrier sergeants, farrier corporals and farriers; all experienced men should be enlisted and be directly under the veterinarians, to do the dressing, administer medicines, etc.

I think a committee should be formed from army veterinarians who will work for the main object (a commission), and a bill be prepared to present, as soon as possible. I believe that the majority of those that have anything to do with the matter are in favor of the advancement of the veterinary service of our army.

The above are only my personal ideas of what is wanted. There is no harm in expressing views, which ask no favors of anyone and which might be of benefit to the public service.

Very respectfully,

COLEMAN NOCKOLDS.

ANOTHER CRITICISM.

Congress is again in session and our hopes are again blasted, by the introduction of a temporary bill, with exactly the same provisions as that made by the one which died a natural death at the last session of Congress.

We all had hopes that if the General Staff would not condescend to grant us commissions that they would at least take into consideration our worthy colleagues who have become physically disabled while serving their country, but this evidently is not the case, since there is no such provision in the bill now before Congress (No. 654, Senate bill, by Senator Warren).

It seems that a bill with its aim to increase the efficiency of the veterinary service of the army, as the bill is entitled, would have our cause in view to this extent.

Has the profession in the army friends enough in civil life to see that we get a square deal in this matter, or will they stand idly by without making any effort to see that this bill is so amended as to provide for our worthy members who have become disabled in their line of duty, and if they were turned out with three months' pay would some be at the mercy of this cruel world?

ANON.

LEGAL EXCUSE.—“Rastus,” said the neighbor, “I’d like to borrow that mule of yours.”

“Goodness sakes, boss,” was the rejoinder, “I’d like to ’commodate you; but I’s had some ’sperience wif de law. If a man is ’sponsible foh de acts of his agent an’ I was to lend dat mule out it wouldn’t be no time befo’ I was arrested for assassination!”—*(Washington Star.)*

CIVIL SERVICE EXAMINATIONS.

VETERINARY INSPECTOR.

The United States Civil Service Commission announces an examination on February 26, 1908, at the places mentioned in the list printed by the Commission, to secure eligibles from which to make certification to fill 40 vacancies in the position of veterinary inspector, \$1,400 per annum each, in the Bureau of Animal Industry, Department of Agriculture, and vacancies requiring similar qualifications as they may occur in that Bureau.

It will be noted that the entrance salary of this position has been increased to \$1,400 per annum, promotion to \$1,600 to be made after two years' satisfactory service at \$1,400, and promotion to \$1,800 after satisfactory service for two years at \$1,600 per annum.

The examination will consist of the subjects mentioned below, weighted as indicated:

<i>Subjects.</i>	<i>Weights.</i>
1. Spelling (twenty words of average difficulty in common use)	5
2. Arithmetic (simple tests in addition, subtraction, multiplication and division of whole numbers, common and decimal fractions, and United States money)	5
3. Letter writing (a letter of not less than 125 words on some subject of general interest (competitors may select either of two subjects given)	5
4. Penmanship (the handwriting of the competitor in the subject of copying from plain copy will be considered with special reference to the elements of legibility, rapidity, neatness, general appearance, etc.)	5
5. Copying from plain copy (a simple test in copying accurately a few printed lines in the competitor's handwriting)	5
6. Veterinary anatomy and physiology	15
7. Veterinary pathology and meat inspection	30
8. Theory and practice of veterinary medicine	30
Total	100

The last three subjects include general questions on anatomy and physiology, a consideration of the pathology of diseases in general, and such special pathology as is characteristic in the diseases common to food-producing animals. The symptoms, diagnosis and treatment of diseases incident to domesticated animals will be considered.

A competitor who fails to attain an average percentage of at least 70 in the sixth, seventh and eighth subjects will not be eligible for appointment, and the remaining subjects will not be rated.

Seven hours will be allowed for the examination.

Age limit, 20 years or over on the date of the examination.

Applicants must be graduates of veterinary colleges. Those graduating prior to or during 1897 will be admitted if from colleges having a course of not less than two years in veterinary science; applicants graduating since that time must be from colleges having a course of not less than three years and must have taken the whole course or its equivalent, and at least two years must have been spent in the study of veterinary science in such colleges. These facts must be shown in the application.

This examination is open to all citizens of the United States who comply with the requirements.

This announcement contains all information which is communicated to applicants regarding the scope of the examination, the vacancy or vacancies to be filled, and the qualifications required.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in the list printed by the Commission, for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

The United States Civil Service Commission also announces an examination on March 4-5, 1908, to secure eligibles from which to make certification to fill vacancies in the position of food and drug inspector (male), at salaries of \$1,000 to \$1,800 per annum, in the Bureau of Chemistry, Department of Agriculture.

NEW JERSEY VETERINARIANS ON BOARDS OF HEALTH.—J. William Fink, D. V. S., has been appointed a member of the Board of Health of Kearney to succeed Dr. S. G. Hendren, who has moved to Montclair. John B. Hopper, D. V. S., has the honor of presiding at the meetings of the Ridgewood Board of Health, having been elected President of the Board January 8th. The new Mayor of Jersey City, on assuming office on New Year's Day, named Albert F. Mount, D. V. S., as a member of the Board of Health of that city.

The appointment of a veterinary surgeon on the Board of Health of Jersey City was predicted in the January REVIEW, although Dr. Mount did not receive his commission until after the REVIEW went to press. This is an important appointment and no small achievement for the veterinary profession. We congratulate the Veterinary Practitioners' Club of Hudson County; we congratulate the people of Jersey City and we congratulate Dr. Mount. There is a fine opportunity in Jersey City for a veterinarian to demonstrate the character and benefits of veterinary work in the administration of the Health Department.

Besides these new appointments there are a number of veterinarians in other New Jersey cities doing Board of Health work, among whom we might mention A. T. Sellers, D. V. S., Meat Inspector, Camden; J. Payne Lowe, D. V. S., Veterinary Inspector, Passaic; James McDonough, Veterinary Inspector, Montclair; Geo. F. Harker, V. M. D., Meat Inspector, Trenton; Werner Runge, D. V. S., Veterinarian Board of Health, Newark; Edward Rowe, Jr., D. V. S., Health Officer, Summit, and Wm. Herbert Lowe, D. V. S., Veterinary Officer and Inspector of Foods and Drugs, Board of Health, Paterson.

We know of no more interesting or important line of work for the qualified veterinarian than Board of Health work. In every municipality a veterinary sanitary service should be established and maintained to safeguard the people from infection of animal origin. Veterinarians should see to it that their profession is given a fair representation on Boards of Health.

OBITUARY.

W. J. OLIVER, V. S.

W. J. Oliver, V. S., was born of remote Scotch parentage. The Oliver family became associated with North of Ireland people by reason of the religious persecutions in their own land. From Ireland, W. Oliver, a farmer, crossed to Canada and settled in Toronto, where he married Miss Anne Hunter, a Canadian by birth, and of English descent. Of this union were born nine children, the youngest being W. J. Oliver, who was the only member in the States. His birth occurred in Toronto, Ontario, March 30, 1848. When he was quite small he lost his mother by death, and was thenceforward thrown to some extent on his own resources. Raised upon a farm in the Township of Toronto, Ontario, he early gained a thorough knowledge of the stock business and the raising of general farm produce; from boyhood he was interested in horses, and during the years he acted as buyer of horses for the American Express Co., of Toronto, he gained a thorough knowledge of equine flesh, and at the same time was obliged to study veterinary medicine, in order that he might understand the diseases of animals to which stock are subject. He entered the Ontario College in 1878, and three years later was graduated with the degree of V. S. From that time until 1886 he engaged in practice in Bramtor, Ontario, and during the last two years of his residence there he also engaged in shipping horses to the West and Northwest. With a desire to see the Pacific Coast region, of which he had heard much, Dr. Oliver visited California in 1886, and during the trip he became so delighted with this country that he determined to establish his home in Los Angeles. Returning to Ontario he disposed of his interests and, accompanied by his family, removed to Los Angeles. He married Miss H. McFarland, a native of York, Canada. By this marriage a son and daughter were born. His son is living in Nome, Alaska. In the Spring of 1898 Dr. Oliver was appointed a member of the State Veterinary Medical Board in and for the State of California, and on the organization of the Board was appointed its Secretary.

Dr. Oliver had a large practice, and also engaged in raising standard bred horses. He became naturalized and voted the Republican ticket. He was a member of the Independent Order of Foresters and also a member of the Order of Elks, both orders participating in the funeral ceremonies. Dr. Oliver was a man of the highest integrity, loved by all who knew him best.

The veterinary profession of California will miss him greatly. He was always one of the foremost to assist in elevating the profession, and always ready to give a helping hand to others not so fortunate as himself. Now that "Life's fitful dream is o'er," truly those who are left behind will "long for a touch of a vanished hand, and the sound of a voice that's stilled."

Peace be to his ashes.

J. L. Tyler, President; A. E. Richel, Vice President; W. E. D. Morrison, R. Y. Whittlesey, W. E. Connolly, J. A. Edmonds, Committee.

J. A. EDMONDS, *Secretary*.

Los Angeles, Cal., Jan. 14, 1908.

COLLEGE COMMENCEMENTS.

ONTARIO VETERINARY COLLEGE.

The Christmas examinations of the Ontario Veterinary College, Toronto, Canada, were held on December 23, 1907. The following gentlemen were awarded diplomas: Gordon M. Cheney, Franklinville, N. Y.; Harry L. Clapp, Picton, Ont.; Charles Ott Davis, Staunton, Va.; Carl O. Eliason, Kerkhoven, Minn.; Hans Erickson, De Kalb, Ill.; Gerhard F. Etscheid, Beaver Dam, Wis.; David Fleming, Collingwood, Ont.; Frank L. Gere, Cuba, N. Y.; James Henry Hess, Hastings, Ont.; Thomas Hook, Erin-dale, Ont.; Wm. Orra Longfellow, Bellefontaine, Ohio; Earl S. Looney, Pigna, Ohio; F. Clifford Lull, Delhi, N. Y.; Chas. Lucian, Morgan, Toronto Junction; Herman E. Plapper, Hilbert, Wis.; John R. Scully, Decatur, Ill.; Dallas Smoyer, Flora, Ind.; John Edwin Thomas, Columbus, Ohio.

THE REVIEW is the best investment I ever made. A prosperous new year for the REVIEW, and its managers.—(H. M. Rinehart, M. D. C., Blandinsville, Ill.)

SOCIETY MEETINGS.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

HOTEL VICTORIA,
Chicago, Ill., December 3-4, 1907.

Meeting called to order, December 3, by the President, Dr. F. H. Barr. Minutes of the last meeting read and approved.

Dr. Barr then delivered his annual address extending a hearty welcome to the members and visitors, dwelling to some extent upon the progress that the Association has made since its organization to its present large membership, numbering near the two hundred mark. It should at least number twice as many, there being in the State nearly five hundred graduates. It should be the duty of every graduate to see to it that he attended the meetings of the Association and became a member of the same. "Yes, every graduate, whether of this State or some other State, should identify himself with the Association of the State of which he is a resident."

"In union there is strength." In a membership comprised of the entire graduate portion of the practitioners of the State we will have a voice in legislative matters which will be heard by the law makers of our State. Pennsylvania sent her committee before the Legislature of her State and virtually obtained the passage of every message for which they asked, and we as members of the I. S. V. M. A. can do the same thing. Let each and every one of us that have that membership use our every means to increase the membership of the Association.

During the month of April of the present year the Chief Executive of the State of Illinois saw fit to appoint to the responsible position of State Veterinarian one qualified, thus retrieving our State from the unenviable position it occupied in the eyes of her sister States and the civilized world while an Empyric occupied the office, and I would recommend that the membership of this Association work in full accord with the State Veterinarian in the duties that evolve upon his office, and render any assistance that lies in their power.

The committees were then instructed to get to business. A communication from Dr. B. T. Woodward, Secretary-Treasurer of the Society of the Veterinary Alumni of the University of Pennsylvania, was read and greatly appreciated by all present. The doctor gave a detailed account of the tuberculin test that is being applied to the dairy herds of Maryland and Virginia and the interest and co-operation that is being taken by the dairymen and stock raisers. He stated that quite a large percentage of animals were found tuberculous.

With this letter he offered the following toast to be read at the banquet: "To the Illinois Veterinary Medical Association—Long may it live and ever stand for progress to the highest planes of our chosen profession."

A communication was read from Dr. W. L. Williams, of the Cornell University, Ithaca, N. Y. It was enjoyed by all, and more especially by the older members who had labored along with the doctor in the infancy of the organization of the Association. He holds a very warm feeling toward this Association. The memories of the many pleasant hours spent with its members and the honors that have been conferred upon him will never fade from his mind. He also urged those who read papers to use more originality and to form opinions of their own and to defend them in the discussions, whether or not they come out conqueror or conquered.

Next in order was the reading of papers and discussions of the same. First, Dr. W. F. Brownlee on the subject "Metritis." A very concise description of the causes and symptoms of the trouble was given by the essayist recommending the following treatment: Remove placental membranes. Then proceed to irrigate the uterus with soft tube and funnel. Use very warm water, after thorough irrigation and syphoning. At last, inject one-half to one pint of glycerine diluted with water. Then insert capsule of glycerine once a day until all symptoms have abated. Medical treatment strychnine hypodermically or nuxvomica internally. If laminitis appears, poultice the feet.

The paper was thoroughly discussed and the glycerine treatment was recommended by those who had used it as being successful.

Dr. Martin then made a report of the Legislative Committee, stating that some graduates have not registered with the State Board. Dr. Baker defended the graduates of the C. V. C. and the licensing board of Illinois, but recommended that the Board

be more careful in giving license to non-graduates, stating that some other States will not recognize our licensed graduates, and urging the Board to make all take the examination and prosecuting the graduates who do not comply with the law.

Motion was made by Dr. Glendenning, seconded by Dr. Walker, that the following names of men who were practicing without registering be placed in the hands of the Legislative Committee: C. L. Fritz, Chicago, Ill.; Dr. Marsh, Towanda, Ill.; Dr. Henning Johnson, Fullerton avenue, Chicago; Dr. Black, Chicago. Amendment by Dr. Martin that any one who knew of any one else practicing without a license to report to the Legislative Committee.

Meeting then adjourned for lunch.

Reconvened at 2 p. m. Paper by Dr. F. H. Behner, Marshall, Ill. Paper, "Paraphymosis." The essayist described a very unique way of amputating the penis with good results. Dr. J. G. Hayes, Freeport, Ill., "The Advantages of Running a Livery Barn in Connection with a Country Practice." The essayist demonstrated the fact that the livery business was quite profitable, with him at least. He suggested that a feed barn be run in conjunction with the livery barn. Dr. W. F. Brownlee says it does not pay. So did Dr. Welch. Owing to the present high prices of stock and feed. Dr. Martin would advise veterinarians to leave it alone. Dr. Natterss cannot see where it would pay. Discussion closed by motion.

Dr. J. M. Kaiser, Chicago, Ill., "Unprofessionalism Among Professional Men." This paper was very interesting, dwelling somewhat upon the difficulties that professional men meet in practice in knowing just where they may be able to know in all cases whether or not they are unprofessional with their brother practitioners. The subject was well and thoroughly discussed and several suggestions were offered by the members who took part in the discussion; that it was difficult sometimes to know just whether or not we were unprofessional. For instance: Suppose that a veterinarian be called several miles to see a case and found that the case was being treated by another veterinarian, what he should do in that case. The suggestion was that he should first ask the owner to call the veterinarian in charge in consultation, or if the owner would not do so, then to ask him to discharge the other veterinarian.

Dr. C. E. Hollingsworth, LaSalle, "Case Reports." Reporting two cases of pustular conditions of the legs following in

death. Legs appeared to be honeycombed. Some one suggested possibly malignant oedema. Dr. Joseph Hughes gave a very elaborate description of the trouble and stated that it was not infrequent in Chicago. The trouble is due to streptococic infection quite frequent in city practice. We find multiple abscesses due to invasion through lymphatics and blood vessels. Some cases recover. Furunculus is quite common. Dr. Quitman indorses very strongly calcium sulphide. Dr. Hughes does not. Streptococic infection may be local and confined to the limb. Sometimes it invades the whole body externally and internally. Dr. Hughes states the staphylococcus does not spread like streptococcus.

Dr. D. Arthur Hughes, Inspector of the Sustenance Department of the U. S. Army, Chicago, Ill. Subject, "Away with Animal Tuberculosis." That scourge, viewed from the standpoint of the meat packer, stock raiser and general public, must be stamped out. The subject was handled most thoroughly by the doctor, and dealt with in a most thorough manner. Tuberculosis seems to be rapidly increasing among cattle, and more especially among hogs. Dr. Hughes stated that in one bunch of seventy-six hogs, forty-six were tubercular. It was also made known that the prize fat steer at the Fat Stock Show in 1906 was sent to the rendering tank on account of tuberculosis.

The paper showed the scholarly attainments of the author and the thorough knowledge that he has of the subject. It is a paper that every veterinarian, farmer and stock raiser should read. Inestimable knowledge was received by each one present from the paper and the discussions. The Association hopes that it will be honored by another paper from Dr. Hughes next year.

Dr. Merillat moved that they extend a vote of thanks to Dr. Hughes. Carried unanimously.

Motion made by Dr. E. L. Quitman that a copy of Dr. D. Arthur Hughes' paper be given to the Associated Press; amended by Dr. Welch that a copy also be given to the *Breeders' Gazette* and other farm papers, who would appreciate it.

Moved to adjourn to meet in the banquet hall at 8 p. m.

At 8 o'clock a large number met at the banquet board at Hotel Victoria, where a most elaborate feast was partaken of. Several prominent visitors were present. Dr. Martin, of Kankakee, acted as toastmaster for the newly-elected president, Dr. C. C. Mills.

Dr. J. A. McDonald, M. D., responded to the toast, "The Veterinarian of the Past and the Present." His address was of considerable length and very interesting as he traveled the course of the veterinarian from the Fourteenth Century to the present time. He urged very strongly a higher education and a thorough qualification of the student before entering college. He also described the inhuman punishment inflicted upon the dumb brute by the old time farrier and the humane treatment of the educated veterinarian of to-day.

Dr. W. F. Scott, Oak Park, member of the State Veterinary Examining Board, defended the action of the Board against the accusation of some who imagined that the Board did not act in strict compliance with the law in all cases.

Dr. C. C. Mills, newly elected President of the Association, "The Country Practitioner." He cited some of the pleasures and displeasures of the country practitioner and his work.

Dr. A. C. Worms, as President of the Chicago Veterinary Association, stated that he always appreciates the visit of the country practitioner and that the latch string of his residence is always on the outside for them and their wives and sweethearts.

Dr. John Dil Robertson, M. D., "Higher Education." He made a very elaborate address for the preliminary education that a student should possess before entering a professional college. The address was most interesting and appreciated by all present.

Dr. A. H. Baker gave a very pleasant address. Among many good things that he said was that common sense succeeds where the higher education often fails.

Dr. L. G. Day, of the Bureau of Animal Industry, responded to the toast, "Hunting the Festive Germ." His talk was amusing as well as instructive.

Several other members took part and the evening was most enjoyable and one that will long be remembered by all those present.

December 4.

Meeting called to order at 10 a. m. by the President, Dr. Barr. Paper by Dr. W. B. Lewin, Russell, Ill. Subject, "Etiology, Semiology and Treatment of Acute Gastro-Intestinal Catarrh of the Ox." Does not recommend physic, but instead give flaxseed tea and tonics. Castor oil, in his opinion, is best in these cases. Does not recommend saline purgatives. Dr. Martin does. Dr. Mills asked if lard would do in case of the absence

of oil. Answer, Yes. Dr. Lewin recommends injecting antiseptics in the rumen through the trocar canula.

The following applications were read and each elected to membership: Dr. Wm. H. McEvers, V. S. (Ont.), '90, 349 Michigan avenue, Chicago; Dr. C. W. Lassen (McKillip), '06, Lake Forest, Ill.; Dr. C. F. Blair, M. D. V. (McKillip), '06, Ransom, Ill.; Dr. T. H. Angew (Ont.), '96, Evanston, Ill.; W. H. Hogan (Amer. Vet.), '98, Pekin, Ill.; J. C. Wingert (C. V. C.), '05, Marengo, Ill.; H. M. Britt (C. V. C.), '05, LaHarpe, Ill.; Geo. P. Frost (C. V. C.), 1897, 695 Wilson avenue, Chicago; Geo. C. Eckley (C. V. C.), '92, Monmouth, Ill.; R. F. Frans (C. V. C.), '06, Stronghurst, Ill.; Wm. F. Kaiser (C. V. C.), '03, 1033 Dearborn street, Chicago, Ill.; Obed H. Lintner (C. V. C.), '06, Mendota, Ill.; Michael Lawler (C. V. C.), '05, 41 East Eighteenth street, Chicago; Frank Sutton (C. V. C.), '04, Malden, Ill.; B. F. Ricebarger (Ont.), '06, 95 Walnut street, St. Charles, Ill.; E. Merilatt (McKillip), 1827 Wabash avenue, Chicago; James M. Hazzard, Jr. (McKillip), '07, Wilmington, Ill.

Paper by Dr. E. S. Fry, Naperville, Ill., "Navil, Ill." The doctor could not suggest much new treatment of this old and perplexing trouble in foals. He coincided with other authors and demonstrated the fact that many cases were infected in utero.

The noon hour having arrived, adjournment was taken for lunch.

Reconvened at 2 p. m.

Dr. Mylne, Aurora, Ill. Paper, "Sands Disease." This being a disease of the sinuses of the head in young animals usually. He cited cases where myomata and necrosis had followed trephining. Many cases get well from treatment. Dr. Martin advised that the wound be not plugged after trephining. Discussion was participated in by several of the members.

Dr. G. W. Wolaver, Edinburg, "Encephalitis in the Mare." He described several cases that he had met with in practice. Some suggested that they simulated parturient eclampsia. Others suggested possibly cerebro-meningitis.

Dr. G. A. Barnes, Forest City, Ill., "Case Reports." He cited several interesting cases that were instructive and interesting.

The following resolution was read and adopted:

Be it Resolved, By the Illinois State Veterinary Medical Association in convention assembled, that we demand that all mem-

bers of this Association comply with the State law by recording their license with the County Recorder in the county in which they reside and practice.

Signed,

N. T. NATTRESS,
C. G. GLENDINNING,
W. H. WELCH,

Dr. L. C. Tiffany made a few closing remarks. Remarks were also made by Dr. A. H. Baker and Dr. L. C. Tiffany upon the methods of municipal inspection.

Dr. L. A. Merillat gave an impromptu address along the lines of interesting the public to seek a knowledge of the benefit of meat and milk inspection.

Annual election of officers:

Dr. C. C. Mills, Decatur, Ill., President.

Dr. C. G. Glendenning, Clinton, Ill., Vice-President.

Dr. Robert G. Walker, Chicago, Treasurer.

Dr. N. I. Stringer, Paxton, Ill., Secretary.

Board of Censors: Dr. J. H. Crawford, Harvard, Ill.; Dr. G. W. Wolaver, Edinburg, Ill.; Dr. F. W. Godsall, Kewanee, Ill.

Motion made and carried that Dr. F. T. McMahon be dropped from the membership roll. Dr. A. T. Peters, of Lincoln, Neb., made a few very pleasant remarks about the conditions and progress of the veterinary profession in Nebraska.

Next in order was the selecting of the place for the semi-annual meeting. Dr. Eckley invited the Association to meet in Galesburg. Dr. Welch extended the invitation for Bloomington, and Dr. Tiffany for Springfield. Upon a vote being taken Galesburg secured the meeting place, to meet July 15.

Members and visitors present during the meeting:

J. H. Crawford, Harvard; F. H. Barr, Pennsylvania; R. W. Story, Princeton; W. B. Wise, Sheffield; L. C. Tiffany, Springfield; C. G. Glendenning, Clinton; J. R. Ward, Oak Park; Frank Sutton, Malden; J. G. Hayes, Freeport; F. E. Jones, Rochelle; W. H. Brownlee, Little York; W. D. Linn, Holcomb; H. A. Miller, Paragon; M. M. Fletcher, Bethany; Earl R. Swim, Taylorville; G. W. Wolaver, Jr., Edinburg; C. F. Behner, Marshall; Michael Lawler, Chicago; A. G. Gieske, Barrington; Jacob Mau, Herscher; Joseph M. Kaiser, Chicago, Ill.; E. S. Fry, Naperville; M. C. Eckley, Galesburg; H. J. Mongeau, Manteno; W. H. Hogan, Pekin; Daniel G. Marks, Chicago; W. F. Scott, Oak Park; Robert G. Walker, Chicago; W. J. Martin, Kankakee; C. S. Hayward, Mattoon; J. F. Gillespie, Tuscola; E. A. Jenkins,

Shelbyville; Albert C. Worms, Chicago; A. G. Alverson, Bloomington; C. E. Hollingsworth, La Salle; M. A. Hollingsworth, La Salle; R. P. Frans, Stronghurst; James E. Stansbury, Pomeroy, O.; C. A. Mack, Stillwater, Minn.; J. F. Mack, River Falls, Wis.; C. F. Blair, Ransom; F. S. Hess, Kentland, Ind.; G. A. Barnes, Forest City; B. F. Hudson, Woveaqua; T. O. Sherborn, Walnut; H. D. Chamberlain, Belvidere; W. C. Galbraith, Wheaton; E. A. Manuel, De Plaines; B. F. Barber, Foda, Ia.; A. H. Baker, Chicago; C. C. Mills, Decatur; Jno. F. Ryan, Chicago; Jos. Hughes, Chicago; D. Arthur Hughes, Chicago; W. H. Welch, Lexington; S. S. Baker, Chicago; Wm. F. Kaiser, Chicago; J. T. Natress, Delavan; C. S. Rassmusen, Huntley; R. A. Hoadley, Yorkville, J. R. Kelso, Chicago; F. W. Godsall, Kewanee; L. A. Merillat, Chicago; N. W. Kyle, Colfax; James Robertson, Chicago; C. P. Draper, Arlington Heights; P. H. Johnson, Morrison; C. Howard Spangler, Lockport; R. S. Heer, Plattsville, Wis.; Jno. Henderson, Chicago; B. E. Gansel, Chicago; C. A. McCormick, M. D., Chicago; Alex. Eger, Chicago; F. W. Christiansen, Chicago; F. E. Brown, Chicago; W. C. Hanawalt, Galesburg; C. S. Hess, Wabash, Ind.; W. B. Lewin, Russell; G. N. Evert, Galena; H. M. Schultz, Stockton; S. H. Miller, Rock Island; C. P. Branigan, Wheaton; O. F. Butterfield, Libertyville; James Smellie, Eureka; J. M. Parks, Chicago; L. H. Quitman, Chicago; Geo. P. Frost, Ravenswood; H. M. Britt, La Harpe; J. C. Wingert, Marengo; Christ F. Gruner, Chicago; Obed H. Litner, Mendota; J. W. Otto, Magnolia; F. W. Christensen, Chicago; F. A. Newell, Chicago; J. H. Ferguson, Chicago; A. M. Mair, Rankin; I. S. Alford, Paxton; C. A. White, Chicago; Wm. H. McEvers, Chicago; Charles A. Pierce, Elgin; J. R. Foster, Huron, S. D.; W. W. Lichty, Woodstock.

It was moved that the association extend a vote of thanks to the Hotel Victoria for its kind and courteous treatment of the Association. A vote of thanks was also given to the assayists and to the retiring officers.

Moved to adjourn.

N. I. STRINGER,
Secretary.

THE ONTARIO VETERINARY ASSOCIATION.

This association of graduated veterinary surgeons of the Province of Ontario, Canada, was inaugurated on the 24th of September, 1874, and has held annual meetings continuously

ever since its inauguration. Its last annual meeting was held in the Ontario Veterinary College, Toronto, on Tuesday, December 24, 1907.

Owing to the absence of the President, the First Vice President, Dr. O. H. Duncombe, V. S., of Watertown, Ont., took the chair, and in a few well chosen words opened the meeting.

The minutes of the last annual meeting were read and adopted.

The Secretary, Treasurer, Registrar and Auditor's reports were received and adopted.

The Treasurer reported deficiency in the receipts not covering expenditures. This deficiency being the result of necessary expenses incurred in opposing bills that had been brought before the Ontario Legislature to grant the title of Veterinary Surgeon to men who were not duly qualified. The opposition of our association to these bills was successful. The title of Veterinary Surgeon was not awarded to these empirics.

The Secretary also reported that he had received letters and personal reports that applications were now being made to the Ontario Legislature for others not qualified men to be granted the title of Veterinary Surgeon by the Ontario Legislature.

Dr. C. Elliott, V. S., explained the difficulties to be contended against in opposing these bills in the Legislature, and the various influences brought to bear that must be most strenuously opposed by all who are earnest in their desire for the best interests and welfare of the veterinary profession in Ontario.

He also explained the reason for the need of funds for this purpose. That the fees and annual dues had been purposely made so exceedingly low that funds had not been required more than sufficient to meet the necessary running expenses. But that when legislative measures inimical to our profession are threatened, considerable time, trouble and expense must be devoted to combat them. That funds must be provided if these bills are to be opposed.

A long and animated discussion took place in connection with this subject, and several important resolutions were brought forward and carried unanimously.

Dr. J. D. O'Neil, V. S., in a discussion on the so-called "Veterinary Correspondence School," of London, Ont., reported that in the present state of the laws in the Province of Ontario it appears to be difficult to prosecute these men legally with a probability of securing satisfactory results.

At the cordial invitation of Prof. A. Smith, the meeting adjourned for luncheon.

At the opening of the meeting after luncheon Dr. E. A. A. Grange, V. S., read an interesting paper on the well known disease of the cow, improperly called milk fever, posturient apoplexy, etc. He explained the difficulties experienced in arriving at a really satisfactory conclusion as to its true etiology and pathology—suggesting the flow and reflow of nervous influence as a probable cause—mentioning deranged conditions in different parts of the animal economy from nervous derangements, and that if this view is correct it ought to be considered a “neurosis.”

Dr. John Wende, V. S., and several others took part in the discussion on this paper that followed.

Dr. Rice, V. S., read an excellent paper on “Calcium Sulphide” that he had used with much success in his practice.

Dr. Mole, V. S., read an excellent paper on “Animal and Plant Life and Their Similarities.” The essentials of each being birth, growth, reproduction and dissolution.

Dr. Quinn, V. S., spoke on the subject of every member of the profession being called on to pay towards a fund for the protection of the veterinary profession in Ontario.

Prof. Reece, of Guilph, brought up the subject of the Toronto University, taking up the matter of veterinary education.

On motion of Dr. O’Niel, seconded by Dr. Grange, the usual sum of \$25 be presented by this association for competition by the students of the Ontario Veterinary College at the approaching examinations at the close of the present session.

The election of officers for the ensuing year resulted in the following: President, O. H. Duncombe, V. S.; First Vice President, F. G. Hutton, V. S.; Second Vice President, C. E. S. Brind, V. S.

Directors: W. Steele, V. S.; C. Elliott, V. S.; W. J. Wilson, V. S.; A. D. Stewart, V. S.; H. Hopkins, V. S.; J. A. Tancock, V. S.; W. Mole, V. S.; J. W. Porter, V. S.

Secretary, Treasurer and Registrar: C. Heath Sweetapple, V. S.

Delegate to Industrial Fair, Toronto: Andrew Smith, F. R. C. V. S.

Delegates to Western Fair, London: J. D. O’Neal, V. S., and W. J. Wilson, V. S.

Auditors: C. Elliott, V. S., and J. H. Reed, V. S.

C. H. SWEETAPPLE, *Secretary*.

SOUTHERN AUXILIARY OF THE CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this association was held at Los Angeles, Cal., December 18, 1907.

Dr. Tyler, Vice President, occupied the chair, in the absence of the President.

The Secretary was ordered to call the roll; there were present the following members: Chas. Keane, A. E. Rishel, L. H. M. DeBiron, L. W. Young, J. A. Dell, J. S. Spangler, Shaw, W. M. MacKellar, C. J. Osborne, A. D. Hubbel, Major Schofield, Chas. Davies, S. Odle, R. T. Whittlesey, Byles, Sellick, Morrison, H. D. Fenimore, W. B. Rowland, I. W. Parks, W. E. Connolly, Tyler, Boucher, McFarlane, Price, A. O. Lee, Y. W. Orme, J. J. Streets, R. L. Tritton, W. E. Phelps, Stephens and J. A. Edmonds.

Dr. Price reported that the Prosecuting Committee had been unable to find anything tangible to prosecute the man Titus on. The President then discharged the Prosecuting Committee, thanking them for their labor.

On motion, the Secretary was instructed to write, by registered mail, to all delinquent members, calling their attention to the fact that they were delinquent in their dues.

On motion, rules were suspended and following gentlemen were elected to membership: Dr. Raymond Johnson, Dr. Abraham J. Farley, Dr. J. S. Spangler. Election of officers was then in order, Dr. Edmonds being voted to the chair. The following gentlemen were elected by ballot: Dr. John Tyler, President; Dr. A. E. Rishel, Vice President; Dr. J. A. Edmonds, Secretary-Treasurer.

The President then called for the papers.

Dr. Morrison then gave a review of the systematic work of the State surgeon and his assistant, complimenting the county veterinary surgeons for their great assistance to the State Department; also calling attention to the able work of Dr. MacKellar and his corps of assistants who represented the department at Washington in this State.

Dr. Morrison further commented upon the harmony that existed between the several departments whom are using every effort to stamp out disease, and to raise the quarantine in each county.

Dr. DeBiron then read a paper on tuberculosis, which brought out a general discussion which was both interesting and instructive.

It was then decided by the chair to appoint a permanent prosecuting committee, with full power to act in all prosecutions against unlicensed practitioners.

On motion, the Secretary was instructed to write to Dr. R. T. Whittlesey, the late President of the association, thanking him for his past services to this Association, and expressing the sympathy of all its members for him during his illness, and hoping for a speedy recovery; and also to Dr. W. J. Oliver, who is now lying seriously ill, expressing the heartfelt sympathy of this Association, and hoping that he will soon be well and among us once again.

On motion, a vote of thanks and congratulations for his excellent clinic was extended to Dr. Rishel.

On motion, a vote of thanks was extended to Dr. Morrison and Dr. DeBiron for their able papers.

The chair then appointed Drs. Keane, Parks, MacKellar and Orme to read papers at the next quarterly meeting.

On motion, it was decided to go by special car to Whittier to attend clinic, offered by Dr. Tyler, at his new infirmary.

On motion, it was moved and seconded that the chair appoint a committee to interview the Health Department, to have a veterinary surgeon appointed as head of inspectors in the Meat and Milk Departments.

On motion the meeting adjourned.

The following resolution on the death of Dr. W. J. Oliver was adopted by the association in session January 14, 1908:

Resolved, Whereas it has pleased Almighty God in his infinite wisdom to remove by death from our midst W. J. Oliver, therefore, be it

Resolved, That this association express its deep regret, and testifies to the high esteem in which our late professional brother was held, and further be it

Resolved, That this association extends to the bereaved family its sincerest condolence in their great sorrow, and may He who tempers the wind to the shorn lamb, be merciful to them and comfort them in their sorrow; further be it

Resolved, That this resolution be spread on the minutes of this association, and that a copy be sent to the family and a copy to the AMERICAN VETERINARY REVIEW.

J. A. EDMONDS, *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

The January meeting of this association was held in the lecture room of the New York-American Veterinary College on the evening of January 8th, with the President, Dr. F. C. Grenside, presiding.

There were 52 members and visitors present. Among the out-of-town visitors were Prof. Williams, of the New York State Veterinary College, Ithaca, N. Y.; Dr. Devine, Goshen, N. Y., and Drs. Smith and Mount, from New Jersey. After the opening business had been disposed of, the president called upon Prof. Williams to present his paper on "The Handling of Wound Infections." Like all of Prof. Williams' contributions, this was a valuable paper and showed careful original investigation as to the value of the various drugs for internal administration in combating generalized septic infections. One of the surprising features of the doctor's paper was the large doses of iodide of potassium which were administered in many of the cases, apparently with impunity. Prof. Williams' paper was freely discussed by Drs. Ackerman, Clayton, Gill, Ryder and others.

Drs. Ryder and Kingston spoke of the excellent results they had obtained by the intravenous injections of *protargol*, especially in cases of purpura haemorrhagica.

Dr. C. N. Darke, of New York City, presented a case report on "Filariæ Immitis in a Dog." The doctor related the baffling symptoms exhibited by the dog for several months, finally the death and the discovery, on post mortem examination, of large numbers of these filariæ in the chambers of the heart and coiled about the heart valves. There were about 60 filariæ in both ventricles of the heart.

Dr. R. S. MacKellar read a very interesting report of a case of purpura haemorrhagica. This case showed every indication of progressive recovery, but while the animal was thought to be well toward convalescence, there was a sudden turn and merged into azoturia. This brought out an interesting discussion on purpura haemorrhagica and azoturia. Drs. Williams, Gill, MacKellar and others taking part.

Dr. Geo. H. Berns exhibited a growth removed from the nasal cavity of a horse. It was a nasal polyp of very unusual size. The specimen was examined with much interest while Dr. Berns explained the operation for its removal.

On motion a vote of thanks was extended to Drs. Williams, Darke, MacKellar and Berns for their contributions to the evening's program.

The death of Dr. W. C. Bretherton, one of our oldest members, was reported to the meeting and the following resolution was offered:

Whereas, It has pleased the Almighty to remove from our midst Dr. W. C. Bretherton; and

Whereas, Our relations with him in the veterinary profession makes it fitting that the members of this association record their appreciation of him; therefore

Resolved, That the very sad and sudden removal of such a man leaves a vacancy that will be deeply realized by the members of the profession;

Resolved, That we express deep sympathy with the afflicted relatives; and be it further

Resolved, That this record be spread in full in the minute book, a copy sent to the relatives, and published in the AMERICAN VETERINARY REVIEW.

J. L. ROBERTSON,
C. E. CLAYTON,
Committee.

Meeting adjourned.

W. REID BLAIR, *Secretary*.

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

A meeting of this association was held on the evening of December 18, 1907, at Oppenheimer's Hall, 514 Ninth street, N. W., Washington, D. C.

Those present were Drs. D. E. Buckingham, H. W. Acheson, F. M. Ashbaugh, Harry Bosley, W. P. Collins, L. S. Cleaves, C. E. Dornheim, A. M. Farrington, John Rome, J. P. Turner, H. Young, C. E. Schroder, J. P. Keifer and R. B. Blume.

The visitors present were Drs. George Hart, Bureau of Animal Industry (Pathological Division); Fred B. Gage, veterinarian, Third Field Artillery, Fort Myer, Virginia, and Walter Fraser, veterinarian, Thirteenth Cavalry, Fort Myer, Virginia.

The feature of the evening was the reading of a paper on the "Diagnosis of Glanders," by Dr. George Hart, and this was

accompanied with pathological specimens. The paper was discussed very fully by the members present and many points of interest were brought out. A rising vote of thanks was tendered Dr. Hart.

The meeting adjourned at 9.50 p. m.

The annual election of officers will be held at the next meeting, January 22, 1908.

F. M. ASHBAUGH, *Secretary*.

MAINE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this association was held at Hotel North, Augusta, Maine, January 8, 1908, with President Blakeley in the chair, and Secretary Freeman at his post. The following veterinarians were present: Drs. Blakeley, Lord, Joly, Darling, Murch, Russell, Salley, Stevens, Jackson and Freeman.

Dr. W. R. Jackson, of Belfast, was elected a member of the association.

An application from Dr. Stewart for membership was referred to the executive committee.

President Blakeley read his annual address, which was interesting, and was well received and appreciated by the members.

Treasurer Salley reported a balance of \$71.16, and Secretary Freeman, instead of a report, presented excuses and confessed negligence.

The treasurer was authorized to pay bills of Drs. Russell and Joly for attending legislature.

The election of officers for the ensuing year resulted as follows:

President, A. D. Murch; Vice President, W. S. Lord; Secretary, A. Joly; Treasurer, I. L. Salley. Executive Committee: Russel, Blakeley, Darling. Thanks were voted to retiring officers.

Dr. Murch, in assuming the presidency, made a very acceptable speech. The members anticipate a successful year.

Dr. Joly demonstrated the result of five tests made by the agglutination method, a simplified way to diagnose glanders, compared with the mallein test, which brought on general discussion.

The tuberculin test for diagnosing tuberculosis was also discussed at length.

The following resolution was adopted:

We, the members of the M. V. M. A. believe firmly in the tuberculin test, and that once an animal reacts such animal should be condemned and dealt with accordingly by our Cattle Commission and that a second test is misleading and unreliable.

An article in the public press condemning our dairies as filthy, etc., was discussed at length and committee of three was appointed to confer with our State Board of Health in regard to the matter.

The following committee was appointed: Drs. Murch, Russell and Joly.

It was moved by Dr. Russell, seconded by Dr. Joly, and carried, that the law requiring the tuberculin test on thoroughbred stock sold within the State should be more rigidly enforced.

Motion Dr. Joly that the managers of our State fairs be notified that in the opinion of the members of the M. V. M. A. that the exhibition of tuberculous cattle is a source of danger, and a menace to public health, and all cattle exhibited should be accompanied by a certificate of tuberculin test.

Motion seconded by Dr. Russell and carried.

Upon motion of Dr. Salley, Dr. White's name was stricken from the books of the association, as he never was entitled to membership, not being a graduate.

Drs. Darling and Murch were appointed to read papers at our next meeting, which will be held at Waterville, Me., April 8th, 1908.

A. JOLY, *Secretary*.

COLORADO VETERINARY MEDICAL ASSOCIATION.

This association convened in annual session January 2, 1908, at Denver, Colo.

The following members answered to roll call: Drs. M. J. Dunleavy, Chas. G. Lamb, Mark White, M. J. Woodliffe, Percy Lamb, Denver; Drs. Geo. W. Dickey and A. J. Savage, Colorado Springs; Drs. Geo. H. Glover and J. E. Newsom, Ft. Collins; Dr. E. J. Foreman, Trinidad; Dr. A. B. McCapes, Idaho Springs; Dr. Fred Geegen, Eaton; Dr. F. W. Culver, Longmont; Dr. Robt. H. Bird, Greeley.

The following members were elected officers for the ensuing year: President, H. R. Thompson, Pueblo; Vice President, Robt. H. Bird, Greeley; Secretary and Treasurer, M. J. Woodliffe, Denver. Board of Directors: Drs. Geo. W. Dickey, F. W. Culver, E. J. Foreman and Mark White.

Dr. Chas. G. Lamb read a very interesting paper on "The Relation of the Veterinarian to Public Health."

Dr. J. E. Newsom read a paper on "The Relation Between Necrotic Stomatitis and Hog Cholera."

This paper brought forth much discussion.

Dr. Mark White read a paper on "Veterinary Missionary Work in the West and South."

In the evening a banquet was held at the Albany Hotel, 25 plates were laid, and every one enjoyed the spread, after which many interesting speeches were made and all went home with a spirit to work for better legislation and the good of the profession.

The next meeting will be held in Denver in June, 1908.

M. J. WOODLIFFE, *Secretary*.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular meeting of this association was held in Donaldson's Hall, Broad and Filbert streets, January 14th, 1908, Dr. B. M. Underhill, the President, occupying the chair.

The following members responded to roll call: Drs. Underhill, Hoskins, Jarrett, Powel, Schnider, Ridge, Vansant, Prouse, Fuller, Marshall, Luitz, Eves, Dubler, Harger and Houldsworth. Visitors: Drs. Williams, Laurence, Noack, Carlisle, Dingley, Falls, and several students from the veterinary school of the W. of P.

Dr. H. B. McDonell, of Middetown, Delaware, was admitted to membership.

Dr. Harger made some very excellent suggestions for the betterment of the association, and Dr. Rhoads moved that a permanent committee of three be appointed to arrange for the program of the future meetings, and that they inaugurate the Question Box. Carried, and the chair appointed on the committee Drs. Schnider, Marshall and Hoskins.

Dr. Marshall spoke of the circular letter that had been sent to veterinarians by Dr. Melvin, in reference to judging horses at horse shows and fairs.

Dr. Marshall had framed an excellent reply, which was well discussed by all present.

Dr. Hoskins reported an exceptional case of glanders, being complicated with endocarditis.

He also reported several cases of mange in horses in different sections of the city.

The program for the February meeting was announced by the committee as follows:

First. Cause and treatment for non-breeding Dairy Cows—*Dr. W. H. Ridge.*

Second. Cause and treatment of Fistula—*Dr. G. S. Fuller.*

Third. Treatment for penetrating street nails—*Dr. S. J. J. Harger*

Fourth. Should we establish any method of knowing Dead-head—*Dr. E. Powell.*

Meeting adjourned at 11.15 p. m.

A. ORMISTON, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The twenty-fourth annual meeting of this association was held at the Windsor Hotel, Trenton, N. J., on Thursday, Jan. 9, 1908.

The meeting was called to order at 10 a. m. President E. L. Loblein occupied the chair and the following members answered to their names: Budd, Conover, Dixon, Forsyth, Harker, Hopper (A. G.), Hopper (John B.), Horner, Jones, Lindsay, Loblein, Lowe (Wm. Herbert), McDonough, Pope, Rogers (Carroll T.), Rogers (Thos. B.), Sellers, Smith (Thos. E.), Turner, Tuttle, Vander Roest.

VISITORS.—Drs. Charles Labash, Passaic, N. J.; William A. Haines, Bristol, Pa.; M. W. Drake, Philadelphia, Pa.; James Hunter, M. D., Westville, N. J., delegate from the Gloucester County Medical Society, and W. H. Ridge, Trevese, Bucks County, Pa., President of the State Board of Veterinary Medical Examiners of Pennsylvania.

MINUTES APPROVED.—The minutes of the semi-annual meeting, held at Asbury Park, July, 1907, were read and approved.

REPORT OF FINANCE COMMITTEE.—The Finance Committee (Dr. J. B. Hopper, *chairman*) reported that they had examined the books of the Secretary and of the Treasurer and that they found them correct in every particular; that the accounts were kept in a very satisfactory and businesslike manner. The Com-

mittee had examined the surety bond of the Treasurer and also the certificate from the bank showing that the proper funds were on deposit.

REPORT OF SPECIAL COMMITTEE.—The Special Committee to confer with the Tuberculosis Commission (Dr. Thos. B. Rogers, *chairman*) reported that they had held several meetings and had also met with the Commission, by appointment, in the State House; that they had presented a number of important recommendations to the Commission with a view of improving the efficiency of the service now being rendered by said Commission. Said Commission had given the committee a respectful hearing, but later reported all the recommendations in the negative. The reason given for their negative attitude was that they did not consider that they had the right or power to adopt the recommendations made. The committee therefore had come to the conclusion that legislation was the remedy for the evils complained of and would recommend that the association proceed through the Legislation Committee.

REPORT OF SPECIAL LIVE STOCK COMMISSION.—Dr. Budd reported that pursuant to a joint resolution passed by both houses of the last Legislature, and approved by the Governor, a special commission had been created to investigate the live stock industry of the state, particularly the horse industry, and to make recommendations thereon to the Legislature this winter. Dr. Budd had the honor of representing the veterinary profession on the said commission. He stated that a sub-committee, consisting of Dr. Voorhees, Mr. Gaunt and himself, had been appointed to draft a bill to improve the horse breeding industry of New Jersey and that they were going to recommend a certain type of stallions to be purchased by the state.

REPORT OF THE COMMITTEE ON LEGISLATION.—The Legislation Committee (Dr. Wm. Herbert Lowe, *chairman*) reported at considerable length the work and plans of the committee and the status of the proposed legislation for the amalgamation of the several branches of the veterinary service of the state into a single bureau, to be organized and maintained under competent veterinary direction; this bureau to be a Bureau of Animal Industry, conducted somewhat along the lines of the federal Bureau of Animal Industry, with ample scope to deal with all animal problems appertaining to the advancement of scientific agriculture and to safeguard the health and lives of the human popula-

tion from infectious and dangerous diseases of animal origin; bureau to have supervision over the inspection of dairies and abattoirs as well as of milk, meat and all other animal food products.

Counsel had been retained by the committee and a bill was being drafted containing the necessary provisions. This measure would soon be ready for introduction in the legislature.

SECRETARY'S REPORT.—The Secretary presented a report showing the receipts of his office, amounting to \$711.12. Of this sum \$600.00 had been turned over to the Treasurer, leaving \$110.75 now on deposit in the Paterson National Bank.

The Secretary read a list of twenty-five delinquents owing dues, ranging all the way from \$9.00 to \$27.00 each—amounting to \$438.00. Some of these delinquents have never paid any dues.

The resignation of Dr. E. R. Voorhees, of Somerville, was read.

The death of Dr. Wm. C. Ferguson, of Paterson, Oct. 12, 1907, was announced.

TREASURER'S REPORT.—Treasurer Thomas E. Smith presented his annual report showing that he had received from the Secretary \$600.00; that the interest on deposits amounted to \$6.26, and that the disbursements of his office amounted to \$160.85, leaving a balance of \$445.41 in the treasury.

UNFINISHED AND NEW BUSINESS.—On motion of Dr. McDonough the Legislation Committee was given power to proceed with the proposed legislation as well as authority to draw upon the Treasurer for all necessary funds.

On motion of Dr. Lowe \$100.00 was appropriated towards the expenses of the A. V. M. A. meeting at Philadelphia next September, and the Chair was directed to appoint a committee to wait upon the committee of the Pennsylvania State Veterinary Medical Association and offer them the assistance of the profession of New Jersey in the same kind, fraternal spirit in which they assisted us at the Atlantic City meeting in 1901.

A motion was adopted authorizing the President to appoint delegates to the International Congress on Tuberculosis at Washington, D. C., Sept. 21-Oct. 12, 1908.

On motion of Dr. Tuttle the President was authorized to appoint an Essay Committee to consist of three members.

On motion of Dr. Hopper the Secretary was instructed to write each delinquent member to the effect that if a settlement

was not made within 60 days that his name would be stricken from the rolls of the association.

On motion the resignation of Dr. E. R. Voorhees, of Somerville, was accepted, to take effect upon the return of his certificate of membership.

On motion a committee of three, consisting of Drs. Wm. Herbert Lowe, John B. Hopper and James McDonough, was appointed to draft resolutions relative to the death of Dr. Wm. C. Ferguson, of Paterson.

ELECTION OF OFFICERS.—The election of officers resulted as follows:

President—Dr. John B. Hopper, Ridgewood.

First Vice-President—Dr. James McDonough, Montclair.

Second Vice-President—Dr. A. T. Sellers, Camden.

Treasurer—Dr. Thomas E. Smith, Jersey City.

Secretary—Dr. Wm. Herbert Lowe, Paterson.

ADJOURNMENT.—The association adjourned for luncheon at 1 o'clock and re-convened at 2 o'clock.

READING OF PAPERS.—Most of the afternoon session was given over to the consideration to two excellent papers of much interest to veterinary practitioners, as follows:

"Knuckling," by Dr. L. E. Tuttle, of Bernardsville, N. J.

"The True Cause of Fistula of the Withers," by Dr. Geo. W. Pope, of Athenia, N. J.

Both essayists brought out a number of important points, which were freely discussed by the members present.

Dr. Hunter, who was present as our guest from the Gloucester County Medical Society, was called upon and made an address, showing that the sister professions (human and animal medicine) were inseparable. He also expressed himself as in favor of the proposed amalgamation of the several branches of the veterinary sanitay services of the State into a single bureau, with a veterinary head. Dr. Hunter extended a most cordial invitation to the members of our association to attend, when convenient, the meetings of the Gloucester County Medical Society.

Dr. Ridge, of Pennsylvania, also extended an invitation for the members of our association to attend the forthcoming meeting of the Pennsylvania State Veterinary Medical Association.

FERGUSON RESOLUTIONS.—The Committee on the Ferguson Resolutions presented the following, which were adopted by a unanimous vote:

Whereas, In the death of William C. Ferguson, D. V. S., Paterson, N. J., which occurred Oct. 12, 1907, the profession loses a worthy and well qualified practitioner and this association an able and highly esteemed member; and

Whereas, His genial companionship is missed here to-day at this representative gathering of veterinarians, which was so much enjoyed at our last annual meeting; therefore, be it

Resolved, That a copy of these resolutions be sent to the AMERICAN VETERINARY REVIEW for publication and also that a copy be sent to his family with a suitable expression of our sympathy for them in their bereavement.

WM. HERBERT LOWE,
JOHN B. HOPPER,
JAMES McDONOUGH,

Committee.

SEATING NEW OFFICERS.—The time having arrived for the seating of the new officers, President Loblein named Drs. Budd and Pope a committee to escort President-elect John B. Hopper before the association. In assuming the office of President Dr. Hopper addressed the association in a few well-chosen words which impressed all those who heard them with his earnestness, loyalty and devotion to the profession and best interests in the association.

Vice-President McDonough made some very pleasing remarks, after which President Hopper proceeded to finish the business of the session with despatch.

The association voted to hold the semi-annual meeting July 9-10, 1908, in the city of Newark. The clinic is to be made an important feature of the meeting.

President Hopper appointed the following committees; other committees will be named at an early date:

Executive—Dr. J. Payne Lowe, *chairman*; Drs. Conover, Tuttle, Hendren, Harker.

Public Health—Dr. Werner Runge, *chairman*; Drs. Lockwood, Ripley, Gray, Downs.

Animal Industry—Dr. Geo. W. Pope, *chairman*; Drs. Maccray, Baldwin, Meiners, E. Mathews.

Finance—Dr. B. K. Baldwin, *chairman*; Drs. Hurley, James Mosedale.

Legislation—Dr. Wm. Herbert Lowe, *chairman*; Drs. Budd, T. B. Rogers, T. E. Smith, Vander Roest, Harker, Loblein.

Local Committee of Arrangements for Semi-annual Meeting at Newark, July 9-10, 1908—Dr. Vander Roest, *chairman*; Drs. Glennon, McDonough.

Publication—Dr. Holdenby, *chairman*; Drs. Vliet, English.

Essay Committee—Dr. James McDonough, *chairman*; Drs. Carroll T. Rogers, Tuttle.

On motion, meeting adjourned.

WM. HERBERT LOWE, *Secretary*.

RANCHMEN express the belief that burning the pastures stays the ravages of blackleg among cattle.

A FURIOUS DOG.—A little girl came running to tell about a mad dog she had seen. "We saw a mad dog!" she gasped, but the words seemed too tame to do justice to the situation. "Oh, he was mad, mad!" she added, frowning and pumping her fists. "He was furious!"—(*Harper's Weekly*.)

LITTLE ACTS OF KINDNESS.—Walter's mother had made a point of teaching him to be kind to animals. "Oh, mother," he exclaimed one day, "I'm sure you will like the little girl who's moved in nextdoor! She's so kind to animals!"

"She looks like a nice little girl," said Walter's mother, "and I think I shall like her, but how is she kind to animals?"

"We had some chestnuts just now, and she found a worm in one, and she—didn't—eat—it!"—(*Lippincott's*.)

CONNECTICUT GRADUATE FINED FOR PRACTICING WITHOUT A LICENSE.—Dr. Chas. H. Myers, of Middletown, Conn., recently appeared in the City Court to answer a charge of practicing veterinary medicine without a license from the Connecticut Board of Veterinary Registration and Examination. Upon being convicted and fined, Myers appealed the case to the Superior Court. The REVIEW is indebted to Dr. B. K. Dow, Secretary of the Board, for a full account of the trial. The carrying of the case to the Superior Court meets the approval and satisfaction of the Board, which is as desirous of testing the constitutionality of the law as Myers is of having the decision of the City Court reversed. If a graduate is convicted and punished for ignoring the law it will make it much easier to prosecute empirics and roaming fakirs.

NEWS AND ITEMS.

DR. OLOF SCHWARZKOPF's regiment left the Philippine Islands January 15, 1908, for Fort Clark, Texas.

CHANCELLOR HENRY M. MACCRACKEN, of New York University, and wife, are spending the winter in Sicily.

DR. C. C. HALL (C. V. C., '06), has been appointed City Veterinarian and Dairy Inspector of Omaha, Nebraska.

CONUNDRUM.—Why shouldn't you speak of private matters when out driving? Because horses carry tales (tails).

J. F. WINCHESTER, D. V. S., is prominently identified with the work of the Anti-Tuberculosis League of Lawrence, Mass.

DEATH terminated in December the services of Dr. Robert H. Drummond, Veterinary Inspector, Bureau of Animal Industry, Kansas City, Kansas.

DR. JULIUS H. URI, Veterinarian 6th Cavalry, U. S. A., recently operated upon for appendicitis at the General Hospital, Presidio Reservation, Cal., is reported convalescent.

It is about 20 years since my graduation at the American Veterinary College. The REVIEW has been a regular adviser ever since. Wishing you a prosperous New Year in your work, —(*J. J. Streets, D. V. S., Ventura, Cal.*)

COMPARATIVE PHYSIOLOGY shows man to be inferior from the point of view of his senses to many animals, being excelled by dogs as regards his sense of smell, by most animals as to his sense of hearing and even by the lowest mollusks as to his power of vision.

DR. F. J. LEITH has been appointed City Veterinarian of Chicago. This position was recently put under the Chicago Civil Service, and in the first examination to obtain eligibles for the position Dr. Leith stood first. The office is a lucrative one and one of much responsibility.

IT IS SAID that the new horse market in Paris will shelter 800 animals, and has an abattoir, where horses injured or otherwise unfit for service will be turned into butcher's meat. About 5,000 horses are slaughtered for food in Paris each year and the number is increasing.

THE desert-bred Arabian stallion Nedjran, brought to America by Homer Davenport, of Morris Plains, N. J., has been bought by Miller Brothers, owners of Ranch 101 at Bliss, Okla. They have 50 young mares sired by a thoroughbred Kentucky horse from western range dams.

THERE were 13 appointments, 4 promotions, 25 transfers and 3 resignations among the Veterinary Inspectors of the Bureau of Animal Industry during the month of December. The services of 12 Veterinary Inspectors were also terminated, the majority of these, however, were only temporary appointees.

THE names of Drs. William F. Egan, San Francisco, Cal., and A. R. Ward, Agricultural Experiment Station, Berkeley, Cal., have been added to the list of practicing veterinarians registered by the Bureau of Animal Industry and authorized to inspect and test with mallein horses for exportation to Canada.

DR. CHARLES H. SCHULTZ, Tacoma, Washington, President of the Veterinary Examining Board of the State of Washington, is now visiting the scenes of his childhood days in Switzerland. He contemplates spending a few months in Vienna and Berlin in perfecting his veterinary education before returning to America.

DR. J. G. RUTHERFORD, Veterinary Director General and Live Stock Commissioner, who was some time ago granted leave of absence on account of ill health, has been unable to take advantage of the privilege of going away to recuperate, being confined to bed. Dr. Rutherford has the profession's best wishes for his speedy recovery.

It is estimated that there are at least one thousand styles of dog collars adopted to his fastidious needs, or at least, to the fastidious caprice of dog fanciers. One of the novelties of the season is a ball-bearing lead for twin pups. No matter how they wriggle and paw each other the ball and socket arrangement prevents the lead from becoming tangled.

IN the federal inspection of live stock placards will hereafter be placed upon all pens and yards which have contained live stock of any kind affected with a contagious or infectious disease. Such placards shall remain where placed by the Inspector until the pen or yard has been properly cleansed and disinfected in accordance with the provisions of an order of the B. A. I.

BONE IN LION'S THROAT.—While the animals in the Central Park Zoo were being fed the other day, a bone lodged in the throat of the lioness, Rose. She was slowly choking to death when her condition was observed by James Coyle, a keeper. He summoned the head keeper, Mr. Snyder, who got poles with crooks on the end and tried to dislodge the obstruction. The lioness, however, fought shy of the keepers, and all efforts to remove the bone were for the time being unsuccessful.

Snyder then opened the cage of the animal and, entering, petted her until he had gained her confidence. Then, taking a short, sharp hook, he thrust it into the mouth of the lioness and, securing a hold on the bone, jerked it out.

The bone was three inches in length, and in removing it the mouth and throat of the animal were torn. The lioness was frantic, but soon became tractable, and with the exception of the lacerations was all right. If the bone had remained in her throat much longer, the keeper said, she would have choked to death.—(*N. Y. Tribune*).

DR. W. H. DALRYMPLE, President of the A. V. M. A., and family, spent New Year's Day with a friend on one of Louisiana's sugar estates. Few people in the North have an adequate idea of the size of one of these concerns. This particular "sugar house" will grind between 100,000 and 110,000 tons of sugar cane this harvest, and turn out something like 17,000,000 pounds of sugar. Dr. Dalrymple has done a good deal for the owner of this estate in the matter of economic stock feeding, a saving which the owner estimates to be at least 50 per cent. for the past four years; or, in other words, in the first 18 months, after instituting a change in his methods, made at the doctor's suggestion, he saved in the neighborhood of \$30,000 on his feed bill. A saving of 30 per cent. over the entire sugar section of the State of Louisiana, with a mule population of 20,000, would represent in one year something like \$750,000, or an amount equal to, if not in excess of, all that it has cost to run the three experiment stations of that State, from all sources, since they were established some 25 years ago.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list:

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 8, 9, 10 & 11.	Philadelphia..	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July 9, 10, 1908..	Newark	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb.....	Hartford	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	Sept., 1908.....	Utica	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	Call of Chair.....	Reading	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call Exec. Com.....	Paterson, N. J..	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Monthly.....	Boston.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	April 8, 1908.....	Waterville....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n.....	Feb. 4-5, 1908.....	Ottawa.....	A. Joly, Waterville.
Central Canada V. Ass'n.....	April, 1908.....	Lansing.....	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	July 15, 1908.....	141 W. 54th St.	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	July, 15, 1908.....	Galesburg.....	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	Not stated.....	Decatur.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	July 2-3, 1908.....	Winnipeg.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	1st Wed., Feb.....	Raleigh.....	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	1st Wed. ea. mo.....	141 W. 54th St.	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	Feb., 1908.....	Columbus.....	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	1st Wed. ea. mo.....	Pittsburgh....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	June, 1908.....	St. Paul.....	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	Jan. and June.....	Philadelphia..	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n.....	Mch. Je. Sep. Dec.....	Philadelphia..	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	Jan. Apl. Jy. Oct.....	Philadelphia..	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	1st and 3d Thur.....	Philadelphia..	J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	of each month.....	Philadelphia..	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	Monthly.....	Philadelphia..	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	June, 1908.....	Philadelphia..	F. H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Feb., 1908.....	Philadelphia..	A. W. Ormiston, 102 Herman
Colorado State V. M. Ass'n.....	Jan. and June.....	San Francisco..	St., Germantown, Pa.
Missouri Valley V. Ass'n.....	Jan. and June.....	San Francisco..	M. J. Woodliffe, Denver.
Rhode Island V. M. Ass'n.....	Mch. Je. Sep. Dec.....	San Francisco..	B. F. Kaupp, Kansas City.
North Dakota V. M. Ass'n.....	Jan. Apl. Jy. Oct.....	Los Angeles..	T. E. Robinson, Westerly, R. I.
California State V. M. Ass'n.....	Jan. Apl. Jy. Oct.....	Los Angeles..	C. H. Martin, Valley City.
Southern Auxiliary of California	Jan. Apl. Jy. Oct.....	Los Angeles..	C. M. Haring, U. C., Berkeley.
State V. M. Ass'n.....	Jan. Apl. Jy. Oct.....	Los Angeles..	J. A. Edmonds, Los Angeles.
South Dakota V. M. A.....	Jan. Apl. Jy. Oct.....	Los Angeles..	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	Jan. Apl. Jy. Oct.....	Los Angeles..	Hans Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	Jan. Apl. Jy. Oct.....	Los Angeles..	Hugh S. Maxwell, Salina.
Ass'n Médécalle Veterinaire Fran-	1st and 3d Thur.....	Manhattan.....	J. P. A. Houde, Montreal.
çaise "Laval".....	of each month.....	Lect. Room, La-	Gustave Boyer, Rigand, P. Q.
Province of Quebec V. M. A.....	1st and 3d Thur.....	von Un'y, Mon.	D. A. Piatt, Lexington.
Kentucky V. M. Ass'n.....	1st and 3d Thur.....	Mon. and Que.	Wm. D. Mason, Pullman.
Washington State Col. V. M. A.....	1st and 3d Thur.....	Not decided.....	E. M. Bronson, Indianapolis.
Indiana Veterinary Association.....	1st and 3d Thur.....	Pullman, Wa.....	E. P. Flower, Baton Rouge.
Louisiana State V. M. Ass'n.....	1st and 3d Thur.....	Indianapolis..	S. H. Ward, St. Paul, Minn.
Twin City V. M. Ass'n.....	1st and 3d Thur.....	Indianapolis..	Louis P. Cook, Cincinnati.
Hamilton Co. (Ohio) V. A.....	1st and 3d Thur.....	Indianapolis..	J. C. Robert, Agricultural Col.
Mississippi State V. M. Ass'n.....	1st and 3d Thur.....	Indianapolis..	C. L. Willoughby, Experiment
Georgia State V. M. A.....	1st and 3d Thur.....	Indianapolis..	B. T. Woodward, Wash'n, D. C.
Soc. Vet. Alumni Univ. Penn.....	1st and 3d Thur.....	Indianapolis..	S. C. Neff, Staunton.
Virginia State V. M. Ass'n.....	1st and 3d Thur.....	Indianapolis..	W. H. Martin, El Reno.
Oklahoma V. M. Ass'n.....	1st and 3d Thur.....	Indianapolis..	A. F. Mount, Jersey City.
Veterinary Practitioners' Club.....	1st and 3d Thur.....	Indianapolis..	F. M. Ashbaugh, Wash., D. C.
Vet. Ass'n Dist. of Columbia.....	1st and 3d Thur.....	Indianapolis..	J. Madsen, Chicago, Ill.
B. A. I. Vet. In. A., Chicago.....	1st and 3d Thur.....	Indianapolis..	B. H. Merchant, Little Rock.
Arkansas Veterinary Society.....	1st and 3d Thur.....	Indianapolis..	E. S. Bausticker, York, Pa.
York Co. (Pa.) V. M. A.....	1st and 3d Thur.....	Indianapolis..	R. H. McMullen, Manila.
Philippine V. M. A.....	1st and 3d Thur.....	Indianapolis..	C. H. H. Sweetapple, For.
Montana State V. M. A.....	1st and 3d Thur.....	Indianapolis..	Saskatchewan, Alta., Can.
Veterinary Ass'n of Alberta.....	1st and 3d Thur.....	Indianapolis..	

PUBLISHERS' DEPARTMENT.

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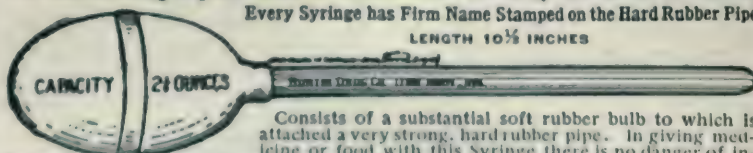
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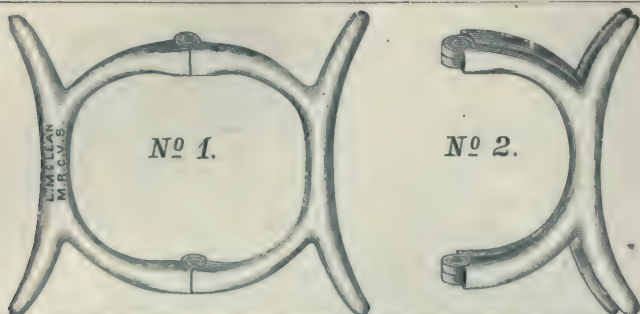
No.			Per tube of 10 tablets.	
114	Aconitine, Crystals.....	1-40 gr.	\$0 12	Carbolic Acid, Boric Acid, Boroglyceride, Sozoiodol, Hydrazine, Sodium Biborate, Eucalyptol, Thymol.
115	Aconitine, Crystals.....	1-30 gr.	13	
109	Aconitine, Crystals.....	1-20 gr.	15	
116	Aconitine, Crystals.....	1-10 gr.	17	
117	Aconitine, Crystals.....	1-6 gr.	22	
118	Aconitine, Crystals.....	1-4 gr.	27	
159	Arecoline Hydrobrom.....	½ gr.	1 00	
160	Arecoline Hydrobrom.....	1 gr.	1 80	
101	Atropine Sulphate.....	1-4 gr.	15	
121	Atropine Sulphate.....	1-2 gr.	18	
119	Atropine Sulphate.....	1 gr.	33	FORMULA: Hydrastine, Sodium Biborate, Eucalyptol, Thymol.
158	Barium Chloride Comp (Ellis)		18	
	{ Barium Chlor.....	7 grs. }		
	{ Digitaline.....	1-12 gr. }		
153	Cardiac Tonic.....		35	
	{ Digitaline, Pure.....	1-10 gr. }		
	{ Sparteine Sulph.....	1-5 gr. }		
	{ Strychnine, Nitrate.....	1-8 gr. }		
102	Cocaine Muriate.....	1 gr.	35	
124	Cocaine Muriate.....	1-½ grs.	45	
125	Cocaine Muriate.....	2 grs.	55	
130	Cocaine, 4½ grs. for Veterinary Anesthesia.....		1 10	
	(One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.)			Antiseptic, Antizymotic, Deodorizer and Parasiticide.
103	Colchicine.....	1-4 gr.	60	
126	Colchicine.....	1-2 gr.	1 00	
127	Colic (Knowles).....		65	
	{ Morphine Sulph.....	2 grs. }		
	{ Atropine Sulph.....	1-4 gr. }		
	{ Aconite Cryst.....	1-20 gr. }		
104	Coniline Hydrobromate.....	1-2 gr.	43	
128	Coniline Hydrobromate.....	1 gr.	60	
105	Digitaline, Pure.....	1-8 gr.	20	SAL-LISTER (A SOLUBLE POWDER.)
129	Digitaline, Pure.....	1-4 gr.	35	
156	Ergotine.....	2 grs.	18	
157	Ergotine.....	4 grs.	27	
113	Eserine Salicylate.....	1-4 gr.	50	
133	Eserine Salicylate.....	1-2 gr.	75	
134	Eserine Salicylate.....	1 gr.	1 25	
135	Eserine Salicylate.....	1½ grs.	1 90	
106	Eserine Compound.....		1 00	
	{ Eserine Salicylate.....	1-4 gr. }		Valuable Surgical Dressing, either dry or in solution.
	{ Pilocarpine Muriate.....	1-2 gr. }		
	{ Strychnine.....	1-8 gr. }		
153	Eserine and Pilocarpine.....		1 50	
	{ Eserine.....	1-2 gr. }		
	{ Pilocarpine.....	1 gr. }		
154	Colic (Forbes).....		2 75	
	{ Eserine Salicylate.....	1 gr. }		
	{ Pilocarpine Mur.....	3½ grs. }		
107	Hyoscyamine Sulphate, Crystals.....	1-8 gr.	1 00	
146	Hyoscyamine Sulphate, Crystals.....	1-4 gr.	1 50	
108	Morphine Sulphate.....	1 gr.	25	Please order by number.
136	Morphine Sulphate.....	1½ grs.	35	
137	Morphine Sulphate.....	2 gr.	40	
138	Morphine Sulphate.....	2½ grs.	50	
155	Morphine Sulphate.....	3 grs.	60	
109	Morphine and Atropine.....		45	
	{ Morphine Sulph.....	1½ grs. }		
	{ Atropine Sulph.....	½ gr. }		
139	Morphine and Atropine.....		45	
	{ Morphine Sulph.....	1½ grs. }		
	{ Atropine Sulph.....	½ gr. }		Goods sent post-paid to any part United States or Canada upon receipt of price.
140	Morphine and Atropine.....		55	
	{ Morphine Sulph.....	2 grs. }		
	{ Atropine Sulph.....	1-4 gr. }		
141	Morphine and Atropine.....		60	
	{ Morphine Sulph.....	2½ grs. }		
	{ Atropine Sulph.....	1-4 gr. }		
142	Nitroglycerine.....	1-10 gr.	14	
143	Nitroglycerine.....	1-5 gr.	17	
110	Pilocarpine Muriate, Crystals.....	1-2 gr.	55	
144	Pilocarpine Muriate, Crystals.....	1 gr.	90	
145	Pilocarpine Muriate, Crystals.....	1½ grs.	1 10	
111	Sodium Arsenite.....	1 gr.	12	
112	Strychnine Sulphate.....	1-4 gr.	12	
147	Strychnine Sulphate.....	1-2 gr.	13	
148	Strychnine Sulphate.....	1 gr.	14	
149	Veratrine Muriate.....	1-4 gr.	12	
150	Veratrine Muriate.....	1-2 gr.	14	

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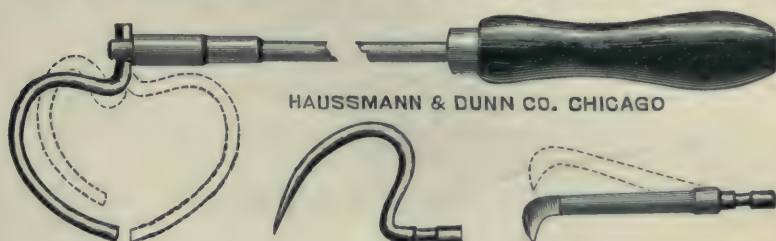
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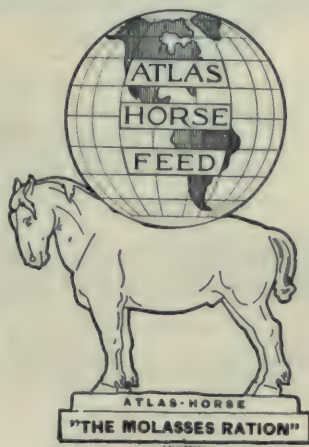
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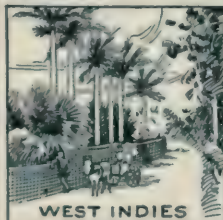
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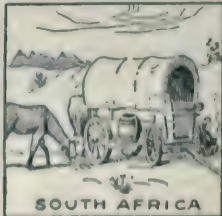
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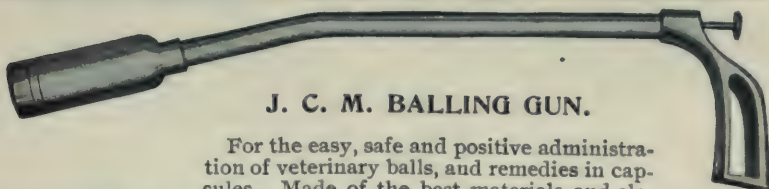
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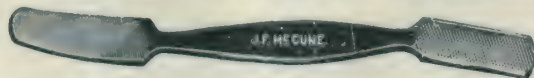
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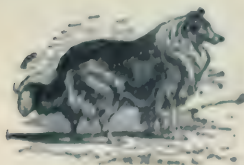
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AMERICAN VETERINARY REVIEW.

MARCH, 1908.

EDITORIAL.

Paris, Feb. 15, 1908.

I was quietly engaged writing my chronicle for this month, when a cablegram from New York was handed to me. It was short, but was terrible!

It contained but three words; but in reading them, passed before my eyes, full of tears, the thirty-one years during which I had known him as a student, as a teacher, as a practitioner, and for the last eleven years as another myself, one of my co-editors in the Review.

"BELL DIED SATURDAY," said the cable, and with these three words sounded for me the tolling of the irreparable loss of a true friend, of a faithful companion and of a great lover of our profession.

Our Journal is saying to the world: The life and work of our dear friend! I must here add a last farewell as if YOU, my confreres and my colleagues, who were near him, who may have assisted him in his last moments, who have attended his funeral and tendered his family words of condolence and of sympathetic consolations, you were the fortunate ones, you have paid him your indebtedness of friendship, while I alone, away from you all, can only read the sad sentence, "Bell is dead," and try to reconcile myself to the horrid fact with the souvenir of the great friendship that united us and of the affectionate feelings that have always existed since 1885, when he entered the class of the A. V. C., to the very last month almost of his life, all now broken forever!!!

ROSCOE R. BELL, D. V. S.

Since the last issue of the REVIEW all that was mortal of our distinguished colleague, Roscoe R. Bell, D. V. S., has been laid in the silent tomb, yet he lives, and will continue to live, in the hearts and memories of all true and noble members of the veterinary profession, for whom he expended freely his energy and gave of his great ability, without reserve, for the advancement and upbuilding of the profession.

Although Dr. Bell took an active part in the proceedings of the American Veterinary Medical Association at Kansas City, last September, and gave everything of value and interest to the profession in the pages of the REVIEW, yet it was evident to those close to him that he realized that his earthly career was rapidly approaching its end.

His old friend, Dr. James L. Lobertson, accompanied him on his trip to Kansas City. They first, however, visited Dr. Bell's farm in Virginia and the scenes of his childhood. After the great meeting at Kansas City was over, Drs. W. L. Williams, Veranus A. Moore, of Cornell University, and the writer accompanied him on his homeward journey. It was a congenial party, but there was an indescribable sadness which all felt that Dr. Bell was probably returning home from the last A. V. M. A. meeting that he would ever attend. He alluded to it himself.

His disease was such that medical science could do nothing except in a palliative way, but it is consoling to know, that one whose life had been given up so largely to his profession should have enjoyed during his last illness the comforts of home, the tender care of a devoted wife and the companionship of his children.

Dr. Bell died February 8, 1908. The funeral services were held in the Congregational Church, near his home (Kensington Station), Brooklyn, N. Y., on the evening of February 11. The services were conducted by the pastor and by Kings County Lodge No. 511, F. & A. M. The spacious church was filled with many of Dr. Bell's professional associates, representatives of the city,

state, and of the American Veterinary Medical Association, as well as by the veterinary faculty of New York University, representatives of other colleges, other state associations, Kings County Lodge No. 511, F. & A. M., friends and neighbors. A large display of floral pieces was strikingly beautiful. "A. V. M. A.," so dear to his heart, were letters that stood out in bold relief on one of the large floral pieces.

Roscoe R. Bell, D. V. S., distinguished himself as a lecturer, educator, practitioner, writer, editor and champion of everything that tended to the broadening and advancement of veterinary science and the uplift of the veterinary profession.

The instruction of not a few of the most successful educators and prominent professors in every calling is limited largely to the students whose good fortune it is to listen to them. It was not so with Prof. Bell. He had the power of assimilating, in a most remarkable degree, everything known to the science and of imparting his knowledge in a way that was most useful and comprehensive, not only to the classes he lectured to in the college, but to the profession at large.

No college platform was large enough for Roscoe R. Bell. His forum for discussing advance knowledge, considering large and intricate professional and educational problems, was the assemblies of his profession and the pages of the REVIEW. Then again, his ability was not limited to the assimilation of scientific truth as it was evolved and imparting his knowledge to others, but he had the power of harmonizing conflicting forces for the everlasting good and broadening of the profession. He was eminently practical in every phase of his professional life, in his teaching and in his professional discourses. A man of less ability would take for the subject of his paper some rare or unusual disease or operation. Dr. Bell delighted to have for his subject some common disease or condition met with in everyday practice which he thought would be most useful to the greatest number of his colleagues, and his treatment of a subject of this class demonstrated the breadth and character of his scientific knowledge, his resource-

fulness and his practicability, which invariably contributed in no small degree to the edification of all who heard him.

Where is the veterinarian whom Dr. Bell has not spoken to through the pages of the REVIEW, or where is the veterinarian who has not listened to him with pleasure and profit in expounding some scientific discovery, in reviewing and summing up the various points of some intricate educational or professional problem, or in championing the cause of veterinary progress in America! Dr. Bell's presidential address before the American Veterinary Medical Association at St. Louis, in 1904, in which he reviewed the educational problem in America, is a masterpiece. It is indeed sad that such a useful and brilliant professional career should have to end in the zenith of his intellectual powers.

As is known to most veterinarians, Dr. Bell was a very successful practitioner. He conducted one of the largest practices in this country up to his retirement from practice about two years ago, yet he always took time to attend the meetings of his state association, and the annual gathering of the A. V. M. A., irrespective of where the meeting took place.

Dr. Bell was born in Augusta County, Va., September 16, 1858. He acquired his early education in public and private schools in Richmond, Va., and from thence went to Norwood College, in the same state. Being bereft by death of both parents at an early age, he was thrown upon his own resources and turned his attention to printing and writing for the press of Virginia, studying the best he could, and in 1880 came to New York, finally becoming a member of the staff of *The Spirit of the Times* until he entered the American Veterinary College, from which he graduated with honors and the degree of Doctor of Veterinary Surgery in 1887. He was married November 29, 1888, to Miss Rebecca Moss, who, with two sons and an infant daughter survive him.

He served as a veterinary inspector of the Bureau of Animal Industry, U. S. Department of Agriculture, in the eradication of

contagious pleuro-pneumonia of cattle from the American continent. In 1888 Dr. Bell became professor of Materia Medica and Therapeutics in the American Veterinary College, and held that chair until 1899, when the American Veterinary College and the New York College of Veterinary Surgeons were united and made a department of New York University. Dr. Bell took a prominent part in effecting the amalgamation of the two schools and in the affiliation of the consolidated school with the university. The council of New York University promptly appointed him to the chair of Material Medica and Therapeutics in the New York-American Veterinary College, which position he filled with credit and honor until his last illness overcame him. He was veterinarian to the Police Department of Brooklyn for a number of years. "The Veterinarian's Call Book," now universally used by veterinary practitioners, is the product of his genius.

Dr. Bell's worth and work have been recognized by the profession in many ways. Not long since he was the president of the New York State Veterinary Medical Society. Only two months prior to his death he retired from the presidency of the Veterinary Medical Association of New York City. He made a remarkable record as president and has set a high standard that it will be no small task for his successors to maintain.

At Ottawa, Canada, in 1903, Dr. Bell was accorded the highest honor in the gift of the veterinary profession of America. The accomplishments of the A. V. M. A. under Dr. Bell's presidency are so recent as not to need review at this time.

Dr. Bell's mind was largely occupied in those things which most concern the welfare of the profession until his strength failed him. It will be our purpose, as it is our bounden duty, to consummate and continue, through the REVIEW, the work he has committed to our care.

We realize in a deep sense the incompleteness and unworthiness of this tribute to the life and worth of Dr. Roscoe R. Bell, but we feel that the readers of the REVIEW will make all due allowance for our shortcomings at this time owing to the distressing exigencies under which we labor.

W. H. L.

EUROPEAN CHRONICLES.

PARIS, January 15, 1908.

The month of September in 1908 will see in the United States two great professional events. At the beginning of the month, the usual anniversary meeting of the great national organization of veterinarians, the American Veterinary Medical Association, and then from the 20th to the 3d of October, the International Congress of Tuberculosis. The former having just closed its works as the second will be ready to begin hers.

For the veterinary profession of America, these two events will no doubt be brilliant opportunities. Many of the attending members of the association will certainly take advantage of their visit to Philadelphia to pay a professional call to Washington, and, again, perhaps some of the veterinarians of Europe, who will officially or otherwise be called to the National Capital for the 20th of September, may be induced to advance their trip to America and stopping in Pennsylvania, participate in the works of our great gathering.

An intimate acquaintance between the veterinarians of the two hemispheres would be the result, and no one can remain blind to the many advantages, social and professional, that would necessarily derive from such gatherings.

Our American confrères will give their foreign brethren the cordial reception which is usual to Americans and the establishment of mutual professional sympathy and friendship will have for result a solid union of those two branches, the European and the American, of the same grand family, the Veterinary Profession.

It is not my intention to make any suggestions to our worthy president of the A. V. M. Association, Dr. Dalrymple, nor to the president of the seventh section of the congress, Prof. Leonard Pearson, as I know both will take all the necessary steps to see that the amalgamation should be firmly realized and consolidated. As far as I am concerned I will do all I can to urge my French confrères to attend to both meetings, will tell them

of the cordial reception that they will receive, of the warmest welcome which they can expect and offer myself as a guide to them should my good star only permit me to accompany them.

* * *

I regret that to this date I have not yet seen much information in relation to the work of the seventh section of the International Congress, as I am sure I would have found in them material to call attention and offer inducements to veterinarians on this side of the Atlantic. As it is I only know that this section will treat of "Tuberculosis in Animals and its Relation to Man."

On the occasion of this heading, our readers may find some interest in the conclusions of a communication made by Prof. Calmette at the International Conference of Tuberculosis at Vienna in September of last year, on the important question of "The Normal Tracts of Entrance of the Tuberculous Virus in the Organism," and which was published in the bulletins of Pasteur Institute. The author, limiting the consideration of the subject only to the results gathered from French sources, examined these normal tracts under only three headings, the respiratory, the intestinal and the hereditary, and he resumes as follows the conclusions:

1st—Contagion of tuberculosis cannot be realized experimentally through the respiratory tracts, except with great difficulty, by the inhalation of tuberculous products or by cultures in *state of moist dusts* (Sprays). Infection by inhalation of *such dry dusts* is very exceptionally realized. Consequently it must be admitted that *dusts carrying bacilli play no part in natural contagion.*

2d—The ingestion of virulent tuberculous products or of cultures in *fine* liquid emulsion, always succeeds in giving tuberculosis to all susceptible animal species. The bacilli can then be absorbed through the intestinal mucous membranes without producing lesions on their way, they are carried with the chyle

to the mesenteric glands. From there they are frequently transported by microphage leucocytes in the current of the lymph of the thoracic duct and thrown with it into the general circulation. Pulmonary capillaries are the most exposed to become the seat of the first formed tuberculous lesions.

3d—The evolution of tuberculous infection is so much more rapid and serious that the number of virulent elements absorbed by ingestion is greater and that the occasions for absorption are repeated at shorter intervals.

4th—Closed tuberculosis lesions, resulting from one *single, unique* infection are liable to get well. This recovery confers a *true immunity* against new infection through the digestive canal. The duration of this immunity is not yet known.

5th—*Parasitar heredity* of tuberculosis is very rare. It always results from an *infection* in utero and may be considered as a factor of some importance.

6th—The notion of *tuberculisable condition* or *heredo-predisposition* must be abandoned, as experimentation shows that *tuberculous infection is always possible* on susceptible animals and that it is in direct proportion *with the number of virulent elements absorbed* or *according to the frequency of the contaminations*.

* * *

Those among our readers who receive the bulletins of the seatings of the Société Centrale here, may wonder at the meanings of the title to a communication that I made before that honorable body, title which translated means: "The Right of Priority of the Application of Cocaine in the Differential Diagnosis of Lameness Claimed for America."

How was I brought to make the communication and take up again the flag of American veterinary profession and hold it high and proud before my French colleagues is quite a story. Here it is, how it all came about.

When I returned for good in France and frequented the professional societies, I heard on several occasions, of the dis-

covery that had been made (?) by a military veterinarian of the use of cocaine in the diagnosis of lameness. The question was the subject of much talk and I took it for granted that the priority that was claimed by our military confrère was referring only to his own country, to France. The thing was old to me. I knew it was of daily practice in the States, I had resorted to it myself very often, and of course, I was not going to dispute a claim for France, as long as I was sure it was limited to that country.

A short time ago, however, the thing took another turn. A rival to the first military veterinarian, also presented himself and although he did not care for the title of priority, he offered proofs that he had resorted to cocaine before his army confrère. This gave rise to a discussion before the Société Centrale, a committee was appointed to inquire, a report was presented and at the conclusion I made the following remarks, which translated, read: "I do not wish to say anything in relation to this question of priority between the two gentlemen, as I have always thought that it was a priority for France alone that was claimed. But I nevertheless desire to state the fact that the use of cocaine to localize the seat of lameness has been known and extensively resorted to in the United States several years before my return to France in 1895, consequently before the question was brought here. The publications that exist in the AMERICAN VETERINARY REVIEW will show it. I have resorted to it myself many a time, etc., etc."

* * *

I had put myself in trouble and I was mildly criticised by one paper, rather severely by another, and finally by the claiming veterinarian, who among his remarks said: "It is without any supporting proof that Mr. Liautard has declared that cocainization of nervous trunks, with the object of localizing the seat of lameness has been put in practice in Germany and in the United States before 1895." And again: "When Mr. Liautard shall

have given me these proofs I will gladly correct my previous historical statements in the matter."

Of course, I had to reply. Hence my communication. I had advanced that in the States of North America we knew of the application before 1895, and I had to prove it. The thing would have been difficult, if not impossible, had it not been for the REVIEW, which gave me three answers. One from Dr. W. J. Torrance, of Cleveland, Ohio, who recorded the two first cases of the use of cocaine in differentiating doubtful cases of lameness. One from Dr. A. H. Baker, who states that it might be resorted to so as to prove a diagnosis. and finally one from Dr. J. E. Brown, of Oskaloosa, Ia., who had written: "As testing proofs in the differential diagnosis of lameness cocaine has not given me very satisfactory results." * * * These were the proofs that I wanted; they were the ones that my opponent was justified to ask. They were published, printed and dated. Having therefore the only qualities that justify without doubt, at least until more information can be had, the positive right to priority.

I closed my communication in claiming the priority for the Veterinary Profession of America of the application of cocaine, which had been used first of all by Dr. Torrance in 1890; *five* years before my French confrère published his observations.

I have called on him to join me in making the claim and I am quite sure he will!

* * *

I have an idea that this incident of my defending priority as belonging to American veterinarians and of relating it here may be of some advantage to our readers. Claims of priority are, so to speak, the title of patentee that is only permitted to a professional man. Different from it, however, because it is purely honorific and not likely to bring the pecuniary gain that a patent will, but yet in a certain light more important.

And how many are ignorant of it! How few take advantage of it?

I have received lately from our esteemed friend, Dr. M. E. Knowles, a letter which I am sure is a proof that he did not make any claim for the important work that he made in introducing "Artificial Impregnation" for sterile large females, in the States.

He writes: "I believe, it is likely I am the first veterinarian in this country at least, to attempt the artificial impregnation of the mares. The first attempt being made in 1886." It was successful; and since, how many mares have been treated by this method. The operation brings such great results that, although performed by laymen, from 50 to 60 per cent. of mares treated by artificial impregnation get in foal. What enormous advantage and how great the indebtedness of breeders is, towards the man who has told them of the operation! I do not know that Dr. Knowles has ever made the claim of that priority, for this operation. But if not, taking into consideration the great importance it has, I think for him and for the credit of American Veterinary Profession, it is very regrettable.

There is, however, a good lesson to be derived from this little event, and which one desirous of establishing a right to priority will do well to bear in mind, namely, that he is sure that he is the first in the ring and that as far as he has been able to ascertain, after searching in the literature on the subject, if there has been anything published before he made his discovery known. And with all that he must be prepared to be obliged to renounce his claims, as every body is not polyglote, and in our days, at the rate scientific discoveries are moving, one must expect that these can be made and recorded in languages with which one may be ignorant.

* * *

I have in a previous communication made allusion to the method of Bier, so called, from the one who introduced it in surgery. I may again to-day relate a few interesting points on the same subject, as they appear to me important and are con-

sidered by M. M. Lemire and Ducoutroy in the *Recueil de Médecine Veterinaire*.

The therapeutic method recommended by Dr. Bier consists principally in producing artificially an hyperæmia, active or passive, according to the cases, for the treatment of some morbid lesions.

In the generalities of his work, "Hyperämie als Heilmittel," Dr. Bier says: "I believe that I am authorized to say that anæmia is never seen occurring in an organism, which is endeavoring to eliminate a morbid center or to render it harmless and which succeeds in doing it. This center is always permeated or surrounded with hyperæmied blood vessels. Therefore if we admit that the reactions of the organism are useful manifestations, natural efforts toward recovery, we must say that, of all the spontaneous curative processes, hyperæmia is the most common."

The pathogenous agents which give rise or keep up morbid centres by their increasing number or by the toxins that they secrete, are fought against efficaciously by passive congestion. By the theory of phagocytosis of Metchnikoff, it is known that, in hyperæmia by moderate stasis, leucocytes gather in great numbers to the diseased spot. Consequently this theory justifies the use of hyperæmia by stasis as therapeutic method. And, as Bier says: "We shall only imitate a natural curative process if, to treat some given bacterian affections, we only strengthen the already existing hyperæmia, or if we establish it where it is not sufficiently powerful."

As an affirmation three cases are published which had been treated by passive hyperæmia, or the venous stasis obtained with an elastic band.

The first is a case of traumatic arthritis, relieved in less than a month; one of traumatic synovitis, cured in a few days, and one of phlebitis of the left hind leg that got well in seventeen days. These three patients were treated with the application of a

rubber band above the seat of injury. I may later on have occasion to review the method more thoroughly.

* * *

The application of this method requires some special indications which I may call practical considerations. Indeed, the method of Bier is simple, economical, fructuous in its results and it deserves to enter in veterinary therapeutics. The results mentioned above justify its application in similar cases which could be treated by passive hyperæmia, and it seems by these cases that the efficacy of the stasis obtained by moderate pressure, is better than the one gained by a strong stasis with tight band, which presses upon the nerves and disturbs the nutrition of tissues. Anyhow this last mode of application has many inconveniences with our patients; first the minutious watching that it requires and second the serious sequelæ that may follow. These can be avoided with moderate pressure, and to realize it, it requires only a slight and short education of the hand. What must be avoided is, too much pressure so as to interfere with the circulation and numb the parts. It is better to secure the band in such a way that the different turns shall not cover each other entirely. In this way the pressure shall be graded and it can be applied upon a broader surface of the leg. A last condition is, that the band shall not be applied too near the seat of inflammation. In the horse, two regions, the inferior extremities of the forearm and of the shank, will be often the seat of the application of the bandage on account of the facility which they offer to hold it; but with a little care and attention no inconvenience will result from this if one is careful not to leave the compression band more than twelve hours a day at a time. Anyhow this compression must have only a limited duration and it must be reduced gradually when recovery is approaching. Yet it must not be stopped too early.

* * *

The two figures that I present to our readers are illustrations of a case of primary epithelioma of the superior jaw, whose

specimens I examined at the Société Centrale, where Prof. Petit exhibited them. The cancer had made its appearance some time before and had been treated as a case of actinomycosis. However, it grew very rapidly, became as big as the two fists of a man and spread right and left. Notwithstanding large quantity



THREE QUARTERS VIEW OF THE HORSE WITH ITS TRACHEOTOMY TUBE.

(From the *Bullet. de la Soc. Cent.*)

of iodine, it assumed such proportion that the respiration was interfered with and tracheotomy had to be performed. Notwithstanding the progress of the disease, the general condition kept comparatively good until finally he was slaughtered.

In showing the specimen Prof. Petit made some interesting

remarks, saying that cancers of the jaws were not rare in animals, and specially in horses. It is the upper jaw which is most commonly affected. Whether they exist on one or the other of the jaws, epitheliomas or sarcomas, may reach enormous



FULL FACE VIEW.

dimensions. When the upper jaw is diseased, a destruction of the palatine roof may take place and a communication is formed between the mouth and the nasal cavities. The sinuses can also be involved.

What is the pathogeny of cancers of the jaws? These tumors are pavementous eiptheliomas. They draw their origin either from the buccal epithelium or the paradental epithelial remains. It is indeed certain that these remains may give rise to voluminous cancers. However, it is difficult to say if pavementous epitheliomas may not also in some instances have a deep and congenital origin different from the one which is generally considered as belonging to them.

The illustration of the poor suffering animal is certainly interesting.

* * *

One year ago, in my chronicle for March, I related the application that had been made of crystallized boric acid in the treatment of severe wounds and in particular of those involving synovial membranes, a method which was introduced by Mr. Busy, in a communication which appeared in the *Recueil de Medecine Veterinaire*, and where after enumerating the chief properties of the acid as a wound dressing and the advantages that would be derived from its use, he mentioned the good results he had obtained in the treatment of several animals very seriously injured.

In a more recent article, Mr. Busy gives further facts in relation to his mode of treatment, by the use of the acid either alone or associated with other medication, among them he says: "Though the treatment is not infallible, in the immense majority of cases, with it, recovery becomes only a question of days." "When there is arthritis, the skin round it is often loose, by inflammatory process, from the synovial underneath, this condition makes it easier to obtain an antiseptic subcutaneous peri-articular dressing in packing under the skin from 30 to 50 grams of the acid. If the separation of the skin does not exist or if it is limited, it is necessary to make it or enlarge it with the finger or the blunt scissors, isolating the tegument from the tissues underneath."

Boric acid has a specific action on synovials and its antiseptic properties, which can be increased by the addition of other

substances more or less volatile. They are very efficacious to act and penetrate between bony surfaces, which would otherwise escape the antisepsy. Early treated by this method, arthritis will leave no trace after a few weeks.

A peculiarity of the external use of boric acid is that it rapidly brings on loss of flesh in the animal treated. It is said that German physicians take advantage of this property by prescribing to their obese patients 50 centigrams of the acid daily. Subcutaneous dressings round a synovial may produce a noticeable loss of flesh in 25 to 30 days. Hence the indications for heavy feeding of animals under that treatment.

Busy relates then the successful results that he has obtained in several cases of arthritis of the elbow-joint, of carpal articulations, of the femoro-tibial and of the tarsal joints, as well as in the treatment of arthritis of other synovial, such as that of the tarsus and tarso-metatarsal regions.

The treatment may not be a panacea for all cases, but surely it has been sufficiently successful to deserve a fair trial at the hands of other practitioners, whose experience only will justify a general acceptance in everyday practice.

* * *

Although the little notice of the bottom of the cover page of our issues has remained the same for many years, and although it is requested by it that authors, editors or publishers should send books for review to my address, it is very, very seldom that such is done by American writers, and the result is that I have no opportunity to fulfill that part of my duties. It is true that some books have found their way in the office of my co-editors, but with few exceptions, not in mine. Is it because my criticisms are too severe, not sufficiently admiring or what? Well, I am sorry if I have not pleased every one, and yet it is a kind of compliment, as many of my criticisms I have found substantiated by those which have appeared in other journals, reviewing the same publications. I cannot make the same remarks in relation

to European publications and I suppose that even if my criticisms are not always palatable, authors and editors find at the same time that the notice they get from the REVIEW is, after all, something and not detrimental to the success of the book.

I have kept a small space in my chronicle for bibliographical notices; whoever may wish to fill it will always receive at my hands a fair, friendly, unprejudiced and impartial treatment.

This month, I have from Asselin & Houzeau a little treatise of diseases of the horse by Mr. F. Breton, late assistant to the chair of clinic at Alfort, and Mr. E. Larioux, army veterinarian. The book is entitled "Elements of Veterinary Clinic." It is a small book of 360 pages, divided into four chapters. The first treats of the clinical examination of the patient. This part recommends itself by the good practical facts that it considers. The second chapter treats of Medical and the third of Surgical clinic. The last chapter reviews the medications that are most usually resorted to. The book is one which will scarcely be of great advantage even to the young practitioner. It is more a general *exade mecum* of theory and practice. Too concise and far from what could have been expected from the authors. It is certainly the forerunner of a more complete treatise of medical and surgical pathology, to appear at a later date. A. L.

THE IMPORTANCE OF ESTABLISHING STANDARDS OF SOUNDNESSES IN HORSES.

There does not seem to be any question as to the desirability and importance of maintaining standards of *excellences* for different classes of horses, cattle, sheep, swine and other domesticated animals. Whenever it has come, however, to the matter of establishing definite standards of *soundnesses* for horses the profession has hesitated and left the matter to the experience and judgment of the individual practitioner to determine for himself.

Here is a difficult problem, but one which has to be met. It

is up to the profession to establish and maintain standards of soundnesses for the several classes of horses. Standards of soundnesses should be fixed. Then there would be something definite for the practitioner to go by in reaching a conclusion and in rendering his decision. Fixed standards of soundnesses would simplify many vexed questions in veterinary jurisprudence and would frequently relieve veterinary practitioners of embarrassment in practice and in court. What constitutes soundness in a given particular would be settled and the only thing to be ascertained would be the physical condition of the animal in regard to a point or points in question.

The urgent importance of the subject under consideration is emphasized at the present hour by reason of the fact that the Bureau of Animal Industry, U. S. Department of Agriculture, is making inquiry of the leading veterinary practitioners of the United States as to what unsoundnesses in horses should disqualify animals from the show ring, with a view of obtaining a consensus of opinion based upon the widest possible professional authority, for the purpose of making an official list of unsoundnesses disqualifying a horse from the show ring.

The inquiry opens up a big subject and demonstrates to the mind of the veterinary practitioner the importance, not only of having a list of show ring disqualifications, but of establishing standards of soundnesses for the several classes of horses. When it comes to fixing standards of soundnesses it may be found desirable to make two standards—one of absolute soundness and another of serviceable or practical soundness.

The passage in various states of laws providing for the licensing and registration of stallions for public service, and requiring these animals to be examined for soundness by a qualified veterinarian before license is granted, necessitates that definite standards of soundnesses be fixed to guide veterinarians in rendering decisions, and which may be recognized by the courts. Veterinarians, breeders, dealers and horsemen generally would welcome the establishment of an official list of hereditary and

other infirmities, malformations and abnormalities which would warrant the disqualification of a stallion from the stud.

Then again, if standards of soundnesses are fixed, veterinary judges will be better able to insist upon a more definite and satisfactory recognition of their services in the horse show arena. Such officials should have supreme authority in the matter of the soundness of exhibits and have the title of "Veterinary Judge." Veterinary judges should not have to wait to be asked for an opinion, but, on the contrary, they should pass on the soundness of the horses that enter the show ring and advise the other functionaries of the existence of any unsoundness disqualifying such animals.

The profession should not only fix standards of unsoundnesses, but it owes it to its own dignity to insist that veterinary judges in the show ring shall be recognized as their position and the importance their services demand. The veterinary judge's absolute and sole right to pass upon the physical qualifications of soundness must at all times be insisted upon.

It seems unwise for horse show directorates to allow veterinary judges to be ignored in their professional rights, for if legal complications arise over the decision of the judges, and it is discovered that the veterinarians were not consulted it would weaken materially the case in any court of law, for the qualified veterinarian would naturally be the only one considered competent by the court to determine upon the soundness or unsoundness of an animal.

The Bureau of Animal Industry has taken up one of the most important phases of the horse industry, one in which every veterinary practitioner in the land is deeply interested in and we confidently believe the members of the profession will be only too glad to co-operate with the bureau by furnishing the information desired. The subject is also worthy the serious consideration of the American Veterinary Medical Association, and we believe that President Dalrymple would do well to give it a leading place on the program at Philadelphia.

The REVIEW is glad to champion the movement to fix standards of soundness of horses, for it believes its accomplishment would be highly advantageous to the veterinarian, the horse breeder, the horse owner and others concerned in the betterment and development of the horse industry. W. H. L.

DISEASED MEAT.—The REVIEW would supplement its editorial on the "Necessity for Veterinary Inspection of Animal Foods for Human Consumption," which appeared in our last number, by inviting the attention of the reader to the subjoined abstract of a statement issued in Albany by the Citizens' League of the State of New York, and published in the *New York Herald*, February 16, 1908:

"It is known to the inspectors of the Bureau of Animal Industry of the Department of Agriculture in Washington that unscrupulous dealers in this and other states are making a practice of disposing of cattle which they know to be diseased to slaughter houses and firms which have no federal inspection. In New York there is no effective inspection except the federal inspection, and these diseased cows are killed and sold to consumers without any check on their healthfulness as food.

"Statistics demonstrate that these firms which have no federal inspection, and therefore virtually have no inspection at all, have been made the dumping grounds for diseased meat.

"The reference made by Governor Hughes, in his message, to the spread of bovine tuberculosis calls attention to a phase of the meat scandal hardly less important than those which inspired the writing of Upton Sinclair's 'Jungle,' and the passage of the new Federal Meat Inspection law by Congress in 1906. The imperative need for an adequate inspection of meat killed and sold within the State of New York is due to the inability of the federal government under the United States Constitution to extend its supervision of slaughter houses and packing houses further than to those which do interstate commerce. It is stated on high

scientific authority that the purity of the milk supply of the state will never be insured till such an inspection is established, because only by the inspection of every cow slaughtered can health officials trace tuberculosis to the herds affected.

"The federal authorities, according to their own figures, are now able to inspect only five-eighths as many head of various kinds of stock as were slaughtered in the year 1900, when the latest census records were made.

"It appears that establishments which had been free from inspection, and had thus an opportunity to cultivate a trade which proper inspection would have excluded, killed nearly three times as many diseased cattle as the slaughter houses which had been subject to federal inspection. These figures point to what is believed to be the condition in the slaughter houses which are not now under any proper inspection, and into which tuberculous and other diseased cattle are being dumped.

"Practically no attempt has been made by this state to exercise its police power for the preservation of health by preventing the sale of diseased meat. The Board of Health of New York City pays some attention to the inspection of meat, but with one inspector detailed to a large number of establishments, at all of which slaughtering is going on at the same time, it is impossible for this inspection to be much more than a farce."

DR. GEO. R. WHITE HONORED.—To the truly scientific mind human and animal medicine are inseparable, although the practice of each is arbitrarily divided into separate and distinct professions. It is, therefore, not at all strange that members of one profession should enter the domain of the sister profession for the purpose of broadening their knowledge and for the advancement of medical science from a comparative viewpoint.

There have been a number of notable instances of M. D.'s taking up the study of the veterinarian and of members of our profession studying human medicine. One of the most recent among veterinarians who has graduated in human medicine as

well as in veterinary medicine, to receive recognition and honor from the sister profession is that popular and loyal veterinarian of Tennessee, Dr. Geo. R. White, treasurer of the American Veterinary Medical Association. It is with much pleasure that the REVIEW notes that Dr. White has been elected a member of the Nashville Academy of Medicine, a member of his city, county and state medical societies and of the American Medical Association, notwithstanding the fact that he does not contemplate the practice of human medicine.

Those who know Dr. White's strong traits of character and his zeal and love for the veterinary profession, know without being told that he will always be a veterinarian in preference to anything else. Instead of abandoning his first love he will now draw from his broadened field of knowledge for her enrichment and growth, while his generous nature will prompt him to contribute from his own specialty to the medical societies for the benefit of human medicine.

VETERINARY SCIENCE IN CURRENT LITERATURE.—"The Perils of Tuberculosis in Cattle and the Remedy," is the title of an excellent article by our talented collaborator, Dr. D. Arthur Hughes, which appeared in the February number of *What to Eat*, the national food magazine, published in Chicago. Dr. Hughes seems to have the happy faculty of presenting in a lucid and comprehensive manner the latest and best that our science has to offer, in language and in style that is intelligible and interesting to the general reader. This is a great gift that few professional men possess. Those who possess it would do well to contribute articles to the leading popular magazines of our day. There is no end to the material within the domain of veterinary science that could be offered to the public for their enlightenment and edification, if it was done in an able and happy manner. There is nothing that would do more to remove popular prejudice against our calling and elevate the profession in the public mind than articles written in a popular style on subjects that concern the public welfare. W. H. L.

ORIGINAL ARTICLES.

MILK AS AFFECTED BY STABLE PRACTICES AND SUBSEQUENT HANDLING.

By M. H. REYNOLDS, *Professor of Veterinary Medicine, University of Minnesota.*

Read before the American Veterinary Medical Association at its 44th Annual Meeting.

The quality and wholesomeness of milk is a matter of such fundamental importance that surely no excuse is needed for presenting it here. The enormous extent to which it is used as a food for children and even adults; the extent to which it is used as food for growing calves and other live stock; the ease of infection, and the fact that disease germs multiply readily in it, using it as a nutrient material; the comparative ease of producing wholesome milk and the grave dangers from bad milk all emphasize the vast importance of the subject, and the necessity of wholesome milk of good quality. We do not realize the importance of milk and its products as food materials; few of us realize actually and clearly the great importance of having it clean and normal; and few realize how very dirty and unsafe clean looking milk may be.

It has seemed to me while planning this paper that the thing most needed was not something profoundly technical or over scientific, but rather something to remind us of things which most medical men already know—which all of us should know.

Recently the writer came across an interesting record of three cases of infectious enteritis in the human from milk contaminated with the excreta of a cow, also an outbreak of scarlet fever which was traced directly to milk. There are plenty of instances of this kind for one who cares to pursue the study. Such things are naturally suggestive to medical men. Outbreaks of typhoid, diphtheria, ptomaine poisoning and various other diseases traceable to cows' milk are reported in our medical journals.

METHODS OF POLLUTION.

Under very common conditions and methods of milking there is practically always more or less pollution. This comes from dust in the atmosphere, which may or may not be carrying pathogenic bacteria. It may come from dairy cows; it may come from dirty hands of the milker; or from the clothing of milkers; or from milk utensils that have not been properly cleaned. Milk in transit is exposed to possible multiplication of germs from unclean containers and high temperatures. Bacteria of innumerable varieties, and other foreign matter may have been left in vessels from previous use, and bacteria multiply with great rapidity. Contamination may occur in the city milk shop, in the creamery, and in a variety of other places. In the city, milk is exposed to contamination from filthy street dust; to contamination from dirty hands or clothing of the handlers, or from impure ice or impure water used in diluting or washing.

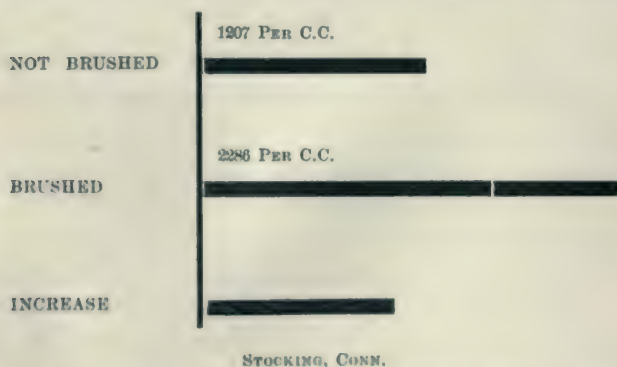
Bacteria in Air.—For the purpose of comparison it may be interesting to study the prevalence of bacteria in free air from an open field or meadow with that taken from barnyards and stables, as presented in Bulletin 91 from the Illinois Experiment Station. A large number of agar petri dishes were exposed in open field and an average of 43 exposures gave but .9 of one colony. Fifty per cent. of the plates were sterile. Of 51 exposures made in the barnyard, 12% were sterile and the average was 13 colonies per plate. Exposures made in stables under various conditions ran as high as 858 colonies per plate and as low as 2, depending on how dirty the stable, how much dust and in general what was going on in the stable.

In one experiment comparison was made between the bacterial condition of the air when the barn had been emptied, with doors and windows shut for three hours, and conditions in the same stable after the cows had been let in and feeding and sweeping had been done. When the barn had been emptied and quiet for several hours, an average of six exposures gave but half a colony per plate. This means that the dust particles had settled

and there were no air currents to stir them up again. After the cows had been replaced in the stable and the usual stable operations had been gone through with, the bacterial count per plate average 151 colonies and ran as high as 412, showing the effect of handling dry food and sweeping,—things which should not be done during milking nor for a considerable period before milking.

A little later, after 15 cows had been brushed by two men, two exposures gave an average of 858 colonies per plate. It is clearly shown in the work done by this station that dust freed by brushing cows contains twice as many bacteria as that from hay or bran.

BACTERIA IN MILK BEFORE AND AFTER BRUSHING.



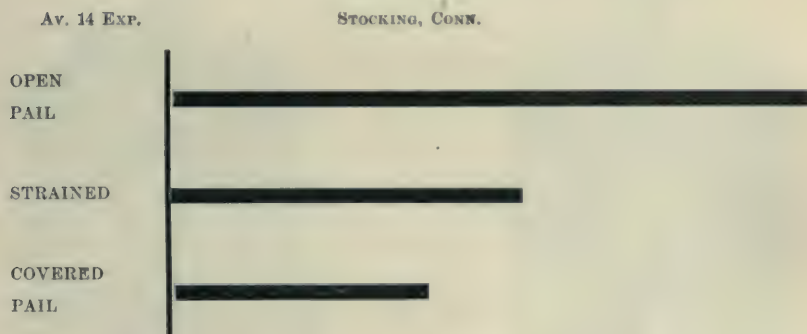
Unexpected Effect of Brushing Udders and Flanks Before Milking.

In another series of experiments, plates were exposed under the udders of cows, some washed and others unwashed. The average number of colonies developing in the plates exposed under washed udders was 192, and under udders that had not been washed 578. In this experiment 420 petri dishes were exposed so that the work was done on a sufficiently large scale to be reliable.

Another interesting experiment, if not an agreeable subject for consideration, was in a study of the amount of dirt which

falls into milk during the process of milking, comparisons being made by weight. Seventy-five tests were made. The udders were divided into three groups: apparently clean, moderately dirty, and muddy. The average amount of dirt from the muddy udders, unwashed was found to be about .88 of a gram. From the udders slightly soiled there was about .13 of a gram. From the apparently clean udders about .01 of a gram. The unwashed udders gave from $3\frac{1}{2}$ times as much dirt with the clean udders, to 90 times as much dirt with the dirty udders as the washed. The author of this bulletin concludes that by far the greatest amount of contamination comes from the udder, under ordinary conditions of milking.

DIRT IN MILK.



Covered Pail Unstrained Milk Much Cleaner than Open Pail Strained Milk.

Note the Large Amount of Dirt in the Open Pail Unstrained Milk.

Bacteria in Milk.—The number of bacteria in milk just drawn varies greatly in the estimates of different authorities, but in general we may say ordinarily from 200 to 100,000 per c. c. of milk, depending upon cleanliness of cow, milker, utensils, air currents, dust and other conditions.

Dr. Marshall is responsible for the statement that a single clean hair may have upon its surface from 50 to 3,000 bacteria, and a dirty hair may have almost any number above this, and

that a dirty hair falling into the milk pail may furnish bacteria by thousands or even millions. Imagine then a dozen or several dozen hairs falling into a single pail from a dirty udder.

The Storrs Conn. Experiment Station has recently issued a bulletin on the "Quality of Milk as Affected by Common Dairy Practices," wherein certain important points are very wisely emphasized and the results of some very important experimental work is given.

DIRT IN MILK.

UDDER DIRTY—FRASER.



BEFORE WASHING.



AFTER WASHING.

Dirt in Milk from Udders Previously Dirty. Washed and Not Washed.

The first experiment reported was in connection with the custom of giving dry feeds at milking time. It is safe to say that this may be considered objectionable from the practical dairy-men's standpoint as well as from the standpoint of the sanitarian. It is very easy to understand that all dry feeds are liable to contain considerable dust or at least to stir up dust in the pro-

cess of handling. Some are liable to be covered with mold spores. Dust is very apt to be laden with a wide variety of germs, some harmless, others objectionable.

In the experiment detailed in the bulletin just referred to, ten cows were used and were divided into two equal groups, one group being milked before feeding and the other after feeding. Dry hay and grain were used in this experiment. The Stadmueller covered pail was used and of course the amount of dust and number of germs getting into the milk from the atmosphere would be very much less than had ordinary open pails been used. The two groups of cows were changed each day to avoid errors which might otherwise have arisen. Milking was done by the same man and all conditions, except the time of feeding, were as nearly identical as possible. The hay is reported to have been of good quality and not especially dusty. It was delivered through a chute from the floor above into a feeding alley, and fed without unnecessary handling or shaking. The grain used consisted of bran, cottonseed and gluten. This was taken from a chute and delivered along a feeding alley to the cows. The results of the experiment are interesting, especially when we remember that milk-souring germs, milk-peptonizing germs and disease germs, if present in the atmosphere would be distributed to the two samples of milk in about the same proportion as the harmless bacteria. The average number of bacteria in the milk taken before feeding was 2096 per c. c., while the average for the milk taken after feeding is 3,506, a difference in favor of feeding after milking of over 1,400 per c. c. Bearing in mind that a c. c. is approximately one-fourth of a teaspoonful, you will see that the difference is very considerable. Had this milk been received in an open pail, kept warm, and shipped 50 miles to market or hauled about town several hours in a milk wagon in July, the difference might have been multiplied indefinitely.

In making a special study of the different varieties of bacteria falling in milk in this experiment, it was found that the number of acid-producing bacteria was uniformly and decidedly

in favor of the milk drawn before feeding and the same held true for liquefying or peptonizing bacteria.

Another similar experiment was in connection with the feeding of dry corn stover at milking time. The conditions were about as in the preceding experiment, except that two cows were used instead of ten. One of these cows was milked before feeding and the other after and the cows were alternated day after day in order to avoid error. The corn stover is reported to have been of unusually good quality and as containing a comparatively small amount of dust. The stover was fed in about the same way as the hay previously mentioned. Attention is called to the fact that the stover was put down the chute to the feeding alley one or two hours before feeding time so that a considerable amount of the dust must have settled before milking.

The average number of bacteria per c. c. in milk drawn before feeding stover was 1,233, and for the milk samples drawn after feeding 3,656, a difference of 2,423 per c. c. more in milk drawn after feeding, or about three times as many. This and similar experiments would have a special significance if stover used should be moldy. In that case the atmosphere would be filled with innumerable mold spores in addition to the usual dust carrying bacteria.

A third experiment was one in which milk from cows whose udders were wiped with damp cloth at the time of milking as compared with others whose udders were not so cleaned. In this experiment again there were used two groups of cows, five in each. One group was milked without any unusual care to avoid dust or dirt,—just ordinarily clean, dry milking. The other group had the flanks and udders wiped with a damp cloth, and the groups were reversed daily. The milking was done by the same man and the Stadmueller covered pail was used. The average number of bacteria per c. c. from the cows whose udders were wiped was 716, the average number from those not wiped 7,058, a decrease probably due to the damp wiping of 6,342 bacteria per c. c., or a decrease of 6,342,000 per gallon. These were not all disease-producing bacteria by any means, nor were they

all bacteria capable of producing objectionable changes in milk. Many of them were milk-souring bacteria, others belonged to the group which produces liquefying changes in the milk. Some may have been infectious disease-producing bacteria. Attention is called in this bulletin to the fact that all of the cows used in this experiment were at an agricultural college and were kept much cleaner than would be the case in an average dairy barn, so that if milk from the udders of cows kept in an average city dairy for instance, should be compared with the milk from cows whose udders and flanks were reasonably clean and then well wiped with a damp cloth, the difference would be startling.

BACTERIA IN MILK.

708 PER C.C. [REDACTED]

COWS NOT WIPED

716 PER C.C. [REDACTED]

WIPED

6342 PER C.C. [REDACTED]

DECREASE

STOCKING, CONN.

Effect of Wiping Udders and Flanks with Damp Cloths Before Milking.

A further experiment was done at the Storrs Station in an effort to secure information concerning the effect of brushing cows at milking time. It is not an uncommon practice among dairymen to brush cows before milking for sake of cleanliness, so this presents a study of a very practical feature. A study of their results shows that there were uniformly many more bacteria in milk from cows that had recently been brushed than in milk from cows not so brushed, or as in this case those milked before brushing was done. The explanation is very simple and the results are just what one might expect. Brushing the cows merely freed considerable quantities of bacteria laden and very objectionable dust. Some of this dust fell into the milk.

This same station has also demonstrated in a very practical and intelligent way that the individual milker has very much to do with bacterial cleanliness of milk. In one experiment five college student milkers were compared with two regular men milking in college stables, but not having had special instruction. In this work the students milked five cows and put their milk in a certain can. The regular men milked five cows and put their milk into another can. A sample of milk was taken from each



MILKING MACHINE.

Milking Machines now seem to give promise of practical work and the possibility of greater cleanliness.

can and tested for the bacterial content. The students had previously some instruction concerning dairy bacteria and concerning clean methods of milking, but both parties of milkers followed the same routine. The flanks and udders of the cows were wiped with a damp cloth by both groups of milkers and the Stadmueller covered pail was used. The average bacterial count per c. c. for the students was 914, and for the regular men 2,846—

three times as much—or a difference of 1,932 per c. c. In some individual cases milk drawn by regular men showed more than nine times as many germs as that taken by the students.

Another similar experiment is even more suggestive. The same two regular milkers were compared with a graduate of the college who had charge of the dairy herd. In each of these latter experiments the graduate milked five cows and the two regular men milked another five cows. The regular milkers attempted at least to follow the same routine as the graduate, having been instructed somewhat concerning the procedure. For both groups of cows, the udder was cleaned presumably by a damp cloth, and the reader may infer that a covered pail was used. The average for 19 experiments in the test now under discussion shows that the milk drawn by the college graduate contained 2,455 bacteria per c. c., while under similar conditions the regular milkers obtained milk containing over 17,000.

In view of this prevalence of dust in dairy stables, and the greater or lesser prevalence according to methods of feeding and stable practices in general, and the fact that dust particles are usually bacteria laden, it becomes a very interesting study—if one offers the query what if these dust particles are carrying considerable numbers of the pigment forming bacteria which produce red milk, or yellow milk, or green, or blue milk?

Or, suppose that these dust particles are loaded with yeasts and various species of bacteria capable of producing alcoholic fermentation, or are loaded with Hueppe's lactic acid bacteria, or some of the numerous species of bacteria capable of producing butyric acid fermentation with its disagreeable odor?

Those who are at all familiar with this subject know that there are numerous bacteria capable of peptonizing milk casein and leaving a wholly or partly clear watery fluid instead of good sweet wholesome milk.

These dust particles may also be carrying considerable numbers of the micrococcus, which produces bitter milk; or specimens of the numerous varieties of bacteria which may produce slimy

or ropy milk, or those which produce soapy milk, or infinitely worse than any of these, bacteria which are capable of producing intensely active poisons like tyrotoxine.

Apparently we are justified in concluding that dry feeding at the time of milking or immediately before, very greatly increases the bacterial content of the milk and impairs its keeping quality. In addition to that a considerable portion of the dust at least must be considered as filth rather than ordinary dust. It is also evident that the simple procedure of damp wiping or washing a cow's udder and flanks, especially if she be reasonably clean before, very greatly improves the cleanliness and presumably the keeping quality of the milk, and it is clearly evident, so far as a limited experiment can demonstrate, that brushing cows at milking time is decidedly objectionable.

Dr. Marshall estimates that the dirt usually found upon a cow, or about the stall, or on dirty clothing of the milker may contain up to 80,000,000 bacteria per gram of dirt, and that 50% of the dirt that falls into the milk is soluble, and of course cannot be strained out or otherwise removed under ordinary conditions.

Backhaus is quoted as estimating that the people of Berlin swallow 300 pounds of this kind of filth per day, or about 54 tons a year. The amount that is consumed by the people of our own cities may properly become a subject for unpleasant conjecture.

It is not well enough understood that one of the serious sources of milk contamination is from dirty pails and other utensils, and that good milk cannot be put on the market from a dairy that is not scrupulously and intelligently clean in this respect. Dr. Marshall reports from 500,000 to 50,000,000 germs per gram of dirt taken from creases in the milk pail, and many thousands from each inch of the inner surface.

In the course of some recent experimental work with manure from tuberculin reacting cows at the University of Minnesota Experiment Station, we have found one cow that gave very virulent faeces as shown by guinea pig inoculations. We found another cow that gave enormous numbers of an acid fast bacillus,

comparing closely in every way with the tubercle bacillus, but which unfortunately was not tested for virulence. However, this cow was known to be tuberculous and had what was supposed to be a tubercular diarrhea. Imagine what could have easily happened with either or both of these cows in an average city dairy with manure smeared on the tail, thence on the udder and flanks, and some one sits down to milk after it is dried.

Dr. Repp reported a very interesting case of a tubercular cow in a paper before the A. V. M. A., in 1903, where tubercle bacteria occurred in the intestinal mucosa in enormous numbers and in smears from the surface of this membrane. Imagine this cow in an ordinary dairy or a cow with tuberculous ulcers on the intestinal mucosa. To make such cases a serious consideration it is not necessary to suppose that the manure becomes smeared on the udder or flank, although this would almost certainly occur. Suppose that it becomes dried on the floor and particles float up in currents of air as ordinary dust. Animals are moving around in the stables, milkers are walking about; here and there doors and windows are open and dust flies, settling in milk pails or upon food soon to be given cattle. In this connection we see the serious importance of such considerations, as those just presented in the work quoted from the Connecticut Station.

Tuberculous cows may unquestionably cough up then swallow infectious material, and excrete tubercle bacilli in the manure. In a work recently reported by Schroeder and Cotton of the Bureau of Animal Industry (Bulletin 88), evidence on this point is given. Cattle were given virulent cultures in water and fed heavily on corn so that considerable quantities of corn would appear in the manure. This was thrown over into an experimental pig pen to four hogs. You will see that this is an experiment bearing upon the common practice of allowing hogs to follow steers, which may not be objectionable if the steers are not tuberculous. Three out of four hogs became infected in this way. In another experiment the manure from cattle known to be tuberculous was put in an experimental pen of four hogs and one be-

came tuberculous. The possible danger of tuberculosis coming through milk cannot be disregarded.

For the physician practicing in a dairy district there is an important suggestion in the fact that hogs are very susceptible to tuberculosis by ingestion. Creamery skim milk in States where there is no law compelling pasteurization, may thus easily become a serious source of tuberculosis among hogs. But the infinitely more serious suggestion is that tubercular bovine fœces may possibly contaminate milk intended for human food. Authorities like Von Behring are now insisting that infection in the human usually comes by ingestion, and that in very early life; i. e., at a time when milk is the exclusive diet.

Cleaning Utensils.—It has been demonstrated by careful and apparently competent experiment, that thorough cleaning of the separator may reduce the bacterial content of milk to one-fourth or one-fifth of that found in milk which has passed through a separator not thoroughly cleaned. Passing milk through a dirty separator is not unlike passing milk through a dirty strainer. The innumerable bacteria in the dirt and slime accumulating in a separator not well cleaned, may in turn contaminate to a serious degree the next and future lots of milk passing through it. There are various methods of washing and cleaning milk containers. Proper washing implies very free use of a good brush and plenty of warm water, followed by thorough washing with sal soda or good alkaline washing powder for getting rid of the fat; then thorough rinsing with boiling water, and a good steaming with live steam, and we have a vessel in which it will be possible to keep clean milk,—milk fit for human consumption. The separator should be well washed every time it is used and to do thorough work all parts coming in contact with milk should be brushed, using 5% borax or any good alkaline powder and then be rinsed in hot water or steam and allowed to dry,—but no soap.

SOMETHING DUE FROM THE CONSUMER.

There is another side to this question—the producer's side—which we must not forget. People must be made to realize the

difference between good milk and bad milk, and to be willing to pay for good quality and cleanliness. It takes an intelligent man and a considerable amount of executive ability and agricultural knowledge to produce clean, wholesome milk. It is more expensive to produce milk of this kind, and we must be willing to pay for it. Very cheap brains and very cheap stables can produce dirty milk. That is easy.

Minneapolis has recently had an experience which may be suggestive in this connection. One of our wealthiest men established an almost ideal certified milk plant. He had the best cows, thoroughly modern stables and a first-class milk plant in every respect. It was very much more expensive than necessary. The feeding and care of the cows, milking operations, cooling of the milk, sterilizing of bottle, bottling, etc., were all that could be desired, and the milk produced in this plant was unusually clean and free from bacteria. The average bacteria count was very low indeed. The milk was without a trace of animal odor; it kept splendidly and was delicious to drink. This man was conducting the enterprise—to some extent at least from purely philanthropic motives. If it had been appreciated by the people—even though it were not profitable—he would probably have been very well satisfied. Our people had not been made to realize the difference between clean milk and dirty milk. Our veterinarians, physicians, ministers, editors, and teachers had evidently not done their duty in educating the public, and a very large proportion of the people in Minneapolis could not see any reason why they should pay more for this milk than for the dirty milk that came to them from the average city dairies, and which would scarcely keep sweet in a refrigerator over night. Our plant was not appreciated and was discontinued.

CITY REGULATIONS.

Any efficient and practical municipal regulation should cover at least these features: viz., there should be a specific content of butter fat which should not be too high; no foreign material should be added for preservation, or any other purpose except

perhaps by a promising new method of preserving milk by the use of peroxide of hydrogen which is subsequently driven off by a degree of heat that does not change the quality or composition of the milk and leaves the milk with remarkable keeping qualities and without any of the peroxide or other foreign material left in it,—simply sterile normal milk. If any other method of preserving milk can be demonstrated as efficient, at the same time absolutely harmless and which will leave the milk normal, then of course it should not be prohibited by city regulations, inasmuch as it does not seem possible to have the milk pass from the cow to the consumer quickly enough so that the milk may be delivered in the best condition. However, as a general proposition

MULTIPLICATION OF BACTERIA.

BACILLUS DIVIDING EVERY 30 MIN.

BEGINNING WITH ONE ORGANISM.

$\frac{1}{2}$	Hour	2	"
1	"	4	"
$1\frac{1}{2}$	"	8	"
2	"	16	"
3	"	64	"
4	"	256	"
5	"	1024	"
24	"	17000000	"

Showing Why Milk Should go Promptly from Cow to Consumer.

the statement must remain for the present that milk should be delivered to the customer as normal milk without even the addition of water though the butter fat be above that required.

There should be requirement that stables and yard should be kept in good condition and that all reasonable precautions for obtaining clean milk be observed at milking time. Cattle giving milk for public or other food supply purpose, must be, in so far as can be detected, in normal health and free from disease which can be transmitted to people or live stock. All cattle giving milk for city supply should be tuberculin tested. Every facility should be offered and utilized to secure early delivery; in other words, the shortest possible time from cow to consumer. A small table

compiled by Marshall is submitted to emphasize this suggestion for prompt delivery:

Difficulties Encountered.—Minneapolis was one of the first cities in the United States, if not the first city, to adopt a tuberculin test ordinance, and St. Paul was very early in the list, so that we have had opportunity to follow this work in Minnesota for a number of years and to study results. A number of difficulties have appeared and some phases of the work are far from satisfactory.

There has been difficulty in securing disinfection of stables after tuberculous cattle were removed. It has been very difficult to impress dairymen with the importance of refilling their stables with tuberculin tested cattle. Our city health departments have been more or less hampered by inefficient employees, because they have been in some cases political appointees rather than men selected on account of fitness. There has been of course the usual difficulty of securing sufficient funds for sanitary work. It has not been possible to retest herds frequently enough to secure the best results. Difficulties have been discovered in the way of permanently marketing "tested" and "condemned" or "passed" cattle so as to avoid fraud.

With the State paying three-fourths of the loss to the owner, that is, three-fourths of the difference between the appraisal and carcass value, the Live Stock Sanitary Board is spending large sums of money. It has often caused the writer, as a member of the Live Stock Sanitary Board and responsible for the use of public funds, some uneasiness and caused him to wonder whether the expense was justified; whether we were getting value received for the State, and yet it is difficult to balance human life or public health against a mere dollars and cents account with the State Treasury. There has been great difficulty for those managing city work to have milk from tested cows only. Mr. A. has his herd tested, cows react and are taken to South St. Paul for slaughter. He replaces these with other cows which as a rule have not been tested and these give milk for the public until

the next test, which may be months or a year later. However, the Sanitary Board has, during the past year, kept a veterinarian at South St. Paul partly for this purpose and our city dairymen may now buy tested cows.

On the other side of the question there is satisfaction in the thought that a very large number of tuberculous cows have been killed, some of which must otherwise have been infecting people and spreading disease among cattle.

The question, already old, as to whether human and bovine tuberculosis are identical and intertransmissible need not concern us seriously in this discussion. Since Koch delivered his memorable address, a whole army of veterinarians, bacteriologists, and pathologists have been working at the problem. Now that the smoke of battle has lifted it is quite evident that there are left on the field the two parties; one holding that bacilli of bovine and human origin present with reasonable uniformity, differences which justify their division into distinct races. The other party holds that there are no important, uniform differences which may not be accounted for by differences in environment. Both parties agree—and this is the kernel of the whole matter, the most important point in the whole discussion—that man is susceptible to tubercle bacilli of either human or bovine origin, and that those from the bovine are distinctly more virulent, so that when milk is exposed to infection from stable tuberculosis, the situation becomes serious for the consumer whether Dr. Koch was right or wrong concerning the point of identity.

GENERAL CONSIDERATIONS.

Milk must not only be clean and kept in clean vessels, but it must also be cooled promptly to check multiplication of bacteria and must reach the consumer in the shortest possible time.

Those who are especially interested in this subject will find some very interesting reading in Vaughn and Novy's "Ptomains and Leucomains." In one instance there cited 54 persons were made very seriously sick after drinking a certain sample of milk.

The trouble was traced to a dealer who furnished the milk, then to the farm from which it came, and study was made of the conditions under which the milk was produced and delivered. The cows were in good health and well fed, but were milked at rather unusual hours, at midnight and at noon. It was the noon milking which alone caused the trouble. This was poured while hot into cans and was then, without cooling, hauled eight miles during the warmest part of the day and in the hottest month of the year to the city dealer.

Such cases of poisonous milk are usually associated with undesirable methods of handling the milk, so that either filth had carried the poison-producing bacteria or that they had gotten into the milk in less objectionable ways and have there developed under conditions to which milk should never be subjected.

Diphtheria, scarlet fever, typhoid, tuberculosis and various other diseases have been traced with reasonable certainty to milk and it should be remembered in this connection that persons handling milk are generally to blame for these outbreaks. Persons affected with any contagious disease should not handle milk vessels or milk intended for human consumption. Authorities differ on many points, for example as to whether milk from the depths of a normal udder is germ free, they differ as to whether the bacterial count tallies with the amount of dirt; they differ on the significance of the number of bacteria per cubic centimeter, but they all agree on the fundamental importance of health and cleanliness for the cow, for the milk, for utensils; freedom from dust, and air currents in the stable; prompt cooling and quick marketing.

Expensive dairy plants are not necessary for the production of clean milk or for high dairy efficiency.

It is important to realize that clean milk has wonderful keeping quality,—keeps wonderfully well if it is properly handled and clean enough. Promptly cooled and properly handled milk that changes rapidly is dirty milk, bacterially and presumably chemically and mechanically also.

At the National Dairy Show held in Chicago, February, 1906, milk was inspected under three classes, certified milk, market milk, and cream. This milk was produced February 12, packed in ice, and scored on February 15. The showing was as follows:

Bacteria	Milk kept sweet (cold)
Certified milk, 0 to 51,000 per c. c.	(after) five weeks
Market milk, 400 to 21,000,000	one week 50 F
Cream, 0 to 2,810,000	seven weeks

Think of it, normal milk sweet after five weeks and kept so by nothing more than cold and its own cleanliness. Most people living in cities and purchasing milk have considerable difficulty to keep it sweet for 24 hours, and often it sours in 12 hours—even when kept in a refrigerator. Mr. Gurler had normal milk on exhibition at Paris—sent from this country. His milk kept sweet long enough for this purpose—merely because it was clean and cold.

The certified milk winning the gold medal was produced in a stable which may be described briefly as having a single story, concrete sides, plastered ceilings, concrete floors, individual watering device and a good system of ventilation. The foremilk was discarded. The milk was received in a covered sanitary pail, taken promptly from the barn, cooled and bottled as soon as possible.

The stable in which the milk winning the silver medal was produced as somewhat similar: a basement barn with concrete floor, well lighted and well ventilated, equipped with modern dairy utensils. After securing the milk it was passed over a cooler, bottled and put on ice.

The comment concerning the market milk winning gold medal was that the barn is well lighted and ventilated, and had cement floors. The walls and ceiling were kept whitewashed, and the manure was hauled directly to the field. Special care is taken to avoid dust in the stable during the time of milking and the cows are kept clean.

We need to realize that good, clean, normal milk is about the most important single article of diet in the whole list, practically indispensable.

We need to realize also that milk may appear clean and be very dirty, and to realize that milk may be mechanically clean and bacterially very dirty and that dirty milk is unsafe milk.

YOUR journal gets better every year, and I do not see how anyone of the profession can afford to be without it for three times the price.—(*W. T. Stroud, V. S., Larned, Kan.*)

WOMAN PAYS \$125,000 FOR STALLION.—The English thoroughbred stallion, Cyllene, has been purchased for \$125,000 by Mrs. Chevallier, proprietress of the Ojo del Agua stud at Buenos Ayres, Argentine Republic. It was this woman who paid \$80,000 for the stallion Pietermaritzberg, which died on January 6, and Cyllene has been bought to replace him. The Ojo del Agua stud is regarded as one of the most successful studs in the world.

COST OF TICK ERADICATION.—Congress appropriated \$150,000 for the work of tick eradication during the fiscal year 1907-8, and it is estimated that \$50,000 additional will be needed to complete the work of the fiscal year 1908. \$250,000 will probably be asked for the fiscal year 1908-9. The chief of the Bureau of Animal Industry estimates that this amount of money could be advantageously and judiciously expended, and that the great benefit which would accrue to the cattle industry of the South, and incidentally, to the country at large from the success of the work abundantly justifies the appropriation.

CHICAGO'S wholesale trade in horses last year was about \$15,250,000; in carriages and wagons, \$12,600,000; in harness and saddles, \$8,200,000; in automobiles, \$4,900,000. With totals for the horse and his equipment exceeding \$36,000,000, or seven times that of the automobile trade, it must be admitted that the horse is still a long way ahead. And the worst of it is that the motor vehicle does not seem to be catching up very fast. Its trade in Chicago made no gains last year, according to the *Tribune's* annual review, while the horse-drawn vehicles gained \$2,100,000, or nearly 20 per cent.—(*N. Y. Herald.*)

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

BY D. ARTHUR HUGHES, PH. D., D. V. M., INSPECTOR, SUBSISTENCE DEPT.,
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Good fortune sometimes pursues a man, sometimes associations of men. A man may well be pleased to wear the hat of Fortunatus. How much the more should an association of men take pleasure in fortuitious circumstances! Such good fortune has befallen the American Veterinary Medical Association for the year 1908, in the happy coincidence that the International Congress on Tuberculosis opens in Washington the same month, September, that our association convenes in Philadelphia.

When the executive committee decided on Philadelphia for the annual assembly in 1908, they had in mind the peculiar felicity which the occasion would have from our professional point of view, and this had governance over them in their choice. Nor will they be mistaken in their judgment. Enthusiastic as are the Kansas, Missouri and Nebraska veterinarians, and as great a following in their enthusiasm as they have in the whole profession of the whole Central West, which resulted in the unusual success of the Kansas City convention, they have peers in the noble state of Pennsylvania, who will compete with them in a friendly rivalry to make the Philadelphia assembly require description as a brilliant chapter in the veterinary history of the United States. That city, the first capital of the country, where Independence Hall (if Faneuil Hall, Boston, is "the cradle of liberty"), was the place whence came the stimulus which gave the youth of liberty its prodigious strength—the home of the many-sided Franklin, writer, legislator, diplomat, inventor, founder of the University of Pennsylvania—yes, that city has had much to do with institutional history, particularly political history, in this country. Let it have as much to do with the making of veterinary history. From the veterinary viewpoint alone the circumstances are propitious which call us to Philadel-

phia at this time, so that our fondest hopes are capable of realization. The Pennsylvania Veterinary Medical Association, just about to reach the buoyant twenty-fifth year of its young manhood, wishes us to celebrate the event with them and to look upon the stately buildings of the Veterinary Department of the State University, erected at a cost of \$350,000, which are to be completed by the summer of 1908. Truly, an auspicious occasion! That man is dull indeed who cannot see that it augurs much for the impress of the University of Pennsylvania upon future veterinary progress in this land. The tongue of an orator cannot remain mute under the inspiration of such events. A man with lively intellect, with the gift of public speech, with palpitating emotions which are keyed to the hour, like President Dalrymple, cannot but give utterance to the general enthusiasm—an enthusiasm which will overflow in other moving speeches, lively discussions, miscellaneous papers, wise resolution or legislation.

If this were the only good to be gained by the trip to the eastern coast in September, 1908, the journey would have more than a par value in the intellectual stock obtained. But the trip would bear compound interest if, to the visit to Philadelphia, were added a trip to Washington to attend the triennial sessions of the International Congress on Tuberculosis, which, by extraordinary good luck, opens in the capital the latter part of September of the same year.

No man among us but remembers the International Conference on Tuberculosis in London in 1901, when Robert Koch, the discoverer of the etiology of tuberculosis, astonished the world with his declaration that there was no such thing as the transmission of bovine tuberculosis to man, nor of human tuberculosis to the domesticated animals, consequently there was no danger to be feared from the milk and meat of tuberculous animals. This single event illustrates the bearing of International Tuberculosis Congresses on world interests. In a paper written for this journal, January and February, 1904, under the caption, "Robert Koch and His Critics," occasion was taken to uncover

most of the errors in Koch's doctrines, and to bring forward arguments from authors in every clime against his dictum. The world's congress of scientists in London, 1901, interested in the study of tuberculosis, passed a resolution running counter to Koch's doctrines. Subsequent research into every ramification of thought touching Koch's dogmas have only solidified scientists of the world against his announcement of 1901. No small part of the scientists opposing him, with a sincere regard for the hygienic interests of their particular peoples, are the leading veterinarians of France, Great Britain, America, yea, more, of Germany itself. If this world-question were settled and there was unanimity of opinion of scientists upon it, the International Congresses on Tuberculosis might for us be tame. Instead of that the question still burns at a white heat. It has come up with renewed gladiatorial activity on the part of scientists on both sides of the question at each successive congress. It will come up, along with the von Behring question, in Washington. What are the opinions of our leading sanitarians on the question is certain; what will be the ultimate destiny of the question is equally uncertain, though it behooves every veterinarian to remember its seriousness and to safeguard the public interests involved in it according to his knowledge, his convictions and his conscience.

Since, then, good fortune permits American veterinarians to attend this year the International Congress on Tuberculosis, which is to be held on our own soil, we may ask ourselves, first: what an international congress on tuberculosis means; and, second, what opportunities this particular International Congress on Tuberculosis offers?

1. What an International Congress on Tuberculosis means.

Previous to 1901 there had been sporadic "conferences" on tuberculosis, sometimes annual, sometimes not, held in one capital or another of Europe and attended by scientists interested in the disease. In 1901, however, at the International Conference, held that year in London, an organization was perfected to bring

into one society those who were combatants in the warfare against the disease, the crusading hosts of all kinds, in all lands—the forces of the state, emperors, kings and princes; the forces of governmental administration, whether of a nation, principality or municipality; the forces of philanthropy, rich benefactors, hospital and charity workers; the forces of clinical workers, whether in private practice or in public asylums; the laboratory workers, veterinarians, nurses and business men. The organization perfected calls for an assembling in some one country, by the courtesy of the national organization against tuberculosis in that country, of all members belonging to the International Congress on Tuberculosis, whether they are citizens of that country or another. The International Congress is a movable society assembling every three years in a different country. In 1902 the congress opened in Berlin, in 1905 in Paris, while in 1908 it will open in Washington.

The meaning of such an organization is concretely illustrated in an account of the International Congress, held in Paris.

This, the last congress of the kind, assembled in the French capital from October 2 to 7, 1905, with Dr. Hérard as president, and Dr. Chauveau, Director of the National Veterinary Schools of France, and Prof. Brouardel, as vice-presidents. According to Dr. Letulle, secretary-general of the congress, the French Republic granted \$20,000 to facilitate the propaganda that year, in the meeting of the congress, against tuberculosis. Delegates were present by appointment of the governments of thirty-three countries. There were 3,500 enrolled as active members and associate members of the congress; 1,500 exhibitors of tuberculous specimens; 800 communications or papers received from individual members.

The general plan may be summarily spoken of under three heads: that for speaking and papers, the exhibition, the social and recreative part.

As a working body for speaking and the hearing of papers the congress was divided into four sections representing four

sides of the work against tuberculosis; all four sections meeting at once in separate rooms at the Grand Palais. Each section, during the week, had seven meetings and 250 papers were read. Readers of papers or speakers were active members of the congress who had paid their fee of twenty-five francs. The exact title of papers, and the summary of each not more than twelve lines long, were required to be sent in before the congress met. These, title and résumé, appeared in the programme and were distributed at the meetings. Members received the following—a volume containing all addresses or discussions on fifteen questions of primary importance; a summary of all addresses in three languages (German, French and English) for distribution before the first meeting of the congress; a guide giving full information on the prevention of tuberculosis in France; a catalogue of the tuberculosis museum and the tuberculosis exhibition in the Grand Palais; finally a volume containing the transactions of the society.

To strongly emphasize the pathological, industrial, social and historical sides of the struggle against tuberculosis there was an exhibition of specimens and materials during the whole of four weeks of October. These exhibits came from the four corners of the earth.

Nor were tributes to great scholars, nor the recreative part of the congress forgotten. Dr. Hérard entertained all the members one evening in the Hotel Continental. M. Loubet, the President of the Republic, invited 120 of the representatives of the governments to a dinner at the palace of the Elysée. The city council received all the members at the Hotel de Ville. The paper, *Le Matin*, gave a fête in their honor at the Théâtre Chatelet, where the entertainers were distinguished members of the opera. The congress ended with a grand banquet at which 600 members sat at table. Thus the feasts of reason and flow of soul in the intellectual part of the programme were closed with a gala night of a character truly French.

The staidness and quiet pageantry of the opening of the congress made a great contrast with the loud gayety of the close. It may serve to suggest what will occur when the congress convenes in Washington, so it is worthy of record here. It occurred at 2 p. m., October 2, 1905, and was devoted to speeches by delegates to the congress from many of the 33 countries represented. M. Loubet, President of the Republic, sat on the platform in the main room of the Grand Palais, surrounded by the German, British, Spanish, Italian and American ambassadors, the venerable Dr. Hérard, president of the congress, several ministers of state, the general secretary of the congress, Dr. Letulle, the delegates of the foreign governments and the members of the French committee. After Dr. Hérard had spoken to the congress on what occurred at previous conferences between 1867 and 1898, at Berlin, Naples, London and Copenhagen, the foreign delegates spoke, namely: Surgeon General Dr. Schjerning (Germany), Dr. Theodore Williams (Great Britain), Professor von Schrötter (Austria), M. Béco (Belgium), M. Zoltovitz (Bulgaria), Dr. Espina d Capo (Spain), Dr. Bayer (United States), Dr. Hotyra (Hungary), Prof. Bicelli (Italy), Dr. Davel (Argentine Republic), Prof. Babès (Roumania), Dr. Rapchenski (Russia), Dr. Hansen (Sweden), Dr. Schmidt (Switzerland), and a representative of China. Then the secretary-general made his report and the congress was declared open by Dr. Hérard.

To the veterinarian two points, which indeed attracted much attention at this congress and occupied much time, are of vital importance: the sanitary question of the place of meat and milk in the transmission of tuberculosis, and Dr. Emil von Behring's announcement of a cure for the human form of the disease.

The first question, that of the inter-transmissibility of bovine and human tuberculosis, occupied the minds of half of the congress, sections 1 and 2, for the most of the first day, October 3, 1905. In the second section, for instance (surgical pathology), the time was given to a discussion on "The Comparative Study of the Various Forms of Tuberculosis," by the French, German and American delegates.

Dr. S. Arloing, the eminent professor in the National Veterinary Schools, at Lyons, came to the following conclusions:

1. Human and bovine tuberculosis were of the same nature and were inter-transmissible.

2. Types of tuberculosis described by some bacteriologists were in reality only varieties of the disease. These varieties were produced by an exaggeration of varying phenomena and pathological changes which the bacillus could produce in the same species of animals.

3. All varieties of the tubercle bacillus, which he described, might be agglutinated in various degrees by the serum of tuberculous patients.

4. All forms of animal tuberculosis must be regarded as dangerous to man.

Dr. Kossel, of Giessen, came to the conclusion:

1. Tuberculosis lesions could be produced in man by bacilli of the bovine type.

2. The flesh and milk of tuberculous animals are the mode of transmission of the tuberculosis of the bovine type.

3. This mode was uncommon compared to the transmission of the disease from man to man.

Dr. M. P. Ravenel, bacteriologist of the L. S. S. Board of the State of Pennsylvania concluded:

1. The division of mammalian tubercle bacilli into two types, human and bovine, had been amply confirmed. These types had cultural, morphological and tinctorial characteristics by which they might usually be recognized. The chief point of difference was to be found in the greater pathogenic power of the human type. Human bacilli, however, are met with that have low pathogenic power.

2. No other species of mammals had been shown to harbor a variety of tubercle bacillus as constant in its characteristics as to justify its classification as a third type.

3. Other species suffering from the disease received their infection from man or from cattle.

4. The human bacillus, as a rule, had a low pathogenic power for cattle, but cultures were not infrequently found which were virulent for the bovine race.

5. The bovine tubercle bacillus had the power of entering the human body and of producing the lesions of tuberculosis.

6. They were at present unable to state the exact proportion of cases in which bovine tuberculosis was transmitted to man, but in view of the evidence at hand they must regard the disease in cattle as the source of a certain part of human tuberculosis, and any relaxation in their laws and precautions against bovine tuberculosis would be unwise.

In section 1, of the congress, that on the "Medical Pathology of Tuberculosis," as appeared from the passwork speeches of Drs. von Behring, Vossel, Lydia Rabinowitsch and S. Arloing, October 3, 1905, the sentiment of the majority was clearly that bovine tuberculosis was a source of danger to man, more particularly children. The congress, therefore, by a large majority, passed the following resolution:

"The congress, after hearing the exposé of the most recent investigations, declares that it is not only indispensable to avoid contagion from man to man, but also to pursue the prophylaxis of bovine tuberculosis, and to continue to take administrative and hygienic measures to avert its possible transmission to our species, and finally, that it is desirable to be on our guard against all forms of animal tuberculosis."

The expectation might be that this enunciation of the opinion of the 1905 congress might be deterrent to the Koch school. The impression was given in the different countries that Koch was not to be taken too seriously. Indeed the British delegates, sent to the congress by order of King Edward VII., said, substantially, that Prof. Koch was given a quietus. None the less, the German investigator has not altered his opinion to which he gave utterance in the 1901 conference in London. After the close of the 1905 congress, in December of that year, he again braved the world by emphatic reiteration of his previous opinion. In the

Nobel lecture, delivered at Stockholm, December 12, under the title, "How the Fight Against Tuberculosis Now Stands," he said:

"Before addressing ourselves, however, to the answering of this question (how the contagion, tuberculosis, should be best combated), we must attain to absolute clearness as to the manner in which infection in tuberculosis takes place, *i. e.*, how the tubercle bacilli get into the human organism, for the sole purpose of all prophylactic measures against a pestilence must be to prevent the entrance of the germ of the disease into man. Now, as regards infection with tuberculosis, only two possibilities have hitherto presented themselves, namely, infection with tubercle bacilli emanating from tuberculous human beings, and infection by tubercle bacilli contained in the flesh and milk of tuberculous cattle. After the investigation that I have made, hand in hand with Schütz, on the relation between human and bovine tuberculosis, we may dismiss the second possibility, or rather at least regard it as so slight that this source of infection, as compared with the other, falls into the background. We arrived at the result that human tuberculosis and bovine tuberculosis are different from one another and *that bovine tuberculosis is not transmissible to man*. With regard to the latter point, however, I wish, in order to prevent misunderstanding, to add that, in saying this, I mean only those forms of tuberculosis that have to be taken into account in connection with the combating of tuberculosis as an epidemic disease—namely, generalized tuberculosis and above all, pulmonary phthisis. It would take us too far if I were to go deeper into the very lively discussion this question has given rise to; I must reserve this for another occasion. *On this head I wish only to add that the testing of our investigations, which has been carried out with the utmost care on a broad basis in the Imperial Office of Health in Berlin, has led to a confirmation of my opinion, and that, moreover, the harmlessness of the bacilli of bovine tuberculosis to man has been proved by the repeated inoculation of human beings with the material of bovine tuberculosis by Spengler and Klemperer. In connection with the*

combating of tuberculosis then, only the tubercle bacilli emanating from human beings have to be taken into account." This passage shows that Koch remains unabashed in face of legions of criticisms.

A man of the same type as Koch is Prof. Emil von Behring, of Marburg. Their careers, as German delegates to international congresses on tuberculosis, have a close similarity, for Koch, the discoverer of the tubercle bacillus, met opposition when he declared there was no danger from the milk and meat of tuberculous animals; and von Behring, the discoverer of the anti-diphtheritic serum, met with doubt when, in 1905, he announced that he had discovered a cure for human tuberculosis. It may turn out that Koch and he are alike in this also, for Koch once announced that he had found a cure, which was dismally untrue.

The interesting point to veterinarians is that the "cure," if cure it turns out to be, was hit upon when von Behring was studying the immunization of cattle against tuberculosis and first prepared his "bovovaccine." The new curative principle which he discovered, as he says, plays the essential part in the immunizing action of bovovaccine. The essential point is that this principle evolved is based upon the impregnation of living cells of the organism with a substance which emanates from the virus of tuberculosis. This substance he terms TC. When TC has become an integral part of the cells of the organism of the animals and has become metamorphosed therein he calls it TX. This TC, or TX, in the tubercle bacillus has extraordinary properties—it is the agent for the production of a formative substance; it possesses fermentative, especially catalytic, qualities; it has a selective action with regard to other substances; and possesses assimilating powers. In the process of immunizing bovine animals against tuberculosis the TC of the bacillus is freed from other substances. The virtue of the TC is that it exercises a symbiotic action, more especially upon the cellular elements in the interior of the tissues which have their origin in the germ

centres of the lymphatic system. The presence of the TC is the cause of the hypersensibility to Koch's lymph (tuberculin), and of protective reaction against tuberculosis.

Von Behring's problem, of course, was how to free this remarkable substance, the TC, from the substances which hinder its therapeutic action? After innumerable experiments on large animals he discovered that the TC, persisting in the tubercle bacilli, can be elaborated *in vitro* in such a manner as to be capable of being applied as a remedy without danger in the treatment of tuberculosis in man.

In the course of his announcement von Behring purposely withheld a detailed account of the manufacture of this miraculous curative. He purposely omitted the statement of the laboratory method, whereby he was able to get the substance TC in hand, satisfying himself, but not the public unduly throbbing with interest, with the announcement made. Before doing this he proposed to place portions of the curative in the possession of prominent experimenters, particularly probably, clinicians, in order that data might be worked out on the virtues of the remedy. We may expect, therefore, that this will be a live question at the Washington Congress in 1908.

II. What opportunities the International Congress in Washington, 1908, offers.

The chance is indeed a rare one, since this great Congress on Tuberculosis meets in America this year, without interfering with the time set for the meeting of the American Veterinary Medical Association, for the veterinarian to attend both. An outline of the opportunities would be: the privilege of seeing the tuberculosis exhibition; of listening to the speeches and addresses by distinguished foreigners; of receiving the publications; of enjoying the social functions, the travel, the observations on the ways and means of combating tuberculosis.

At the close of the 1905 congress in Paris, despatches from Washington were read by Drs. Fling and Jacobs, the American physicians, in which an invitation was extended by our government to the congress for the meeting in 1908 to be held in our

capital. The list of directors of the American National Association for the Study and Prevention of Tuberculosis, of which the International Congress is to be the guest, indicates its scope. Theodore Roosevelt and Grover Cleveland are vice-presidents. Our own national comity is a sufficient guarantee that this republic will make the congress of 1908 as much to the world as was done by the Republic of France in 1905. Physicians, veterinarians, social workers, nurses and other persons having a special interest in tuberculosis are invited to become active or associate members of the congress and to participate in its pleasures.*

The congress will assemble for actual work September 28 to October 3, 1908, though the date of the congress is set for three weeks, September 21, to October 12. During all this time the Tuberculosis Exhibition will be open and a course of lectures by distinguished foreigners will be given. Also demonstrations and clinics of unusual interest to medical men will be conducted during the three weeks. The *British Medical Weekly*, two years ago, complimented us on this plan, which enables visitors from foreign parts to travel through the north of the United States during portions of the first week, attend the congress the second week, and rehabilitate themselves by travel to the southward during portions of the third week.

In the Tuberculosis Exhibition, as was true in Paris, where 1,500 exhibitors sent in objects, materials will be assembled from all corners of the earth. Members will be able to collect and carry away valuable material. Of the separate exhibits, literature often forms a part, and copies of this may be had free. Many states and countries will send in numerous copies of books or papers giving details of the local warfare against tuberculosis. Copies of these may be had for the asking. The education of every medical man cannot fail to be enhanced by visits to the exhibition.

The foreign papers poked lots of fun at the sight of learned professors carrying away the heavy publications of the last con-

* Veterinarians should apply for membership to Dr. John S. Fulton, Secretary-General, 810 Colorado Building, Washington, D. C.

gress in Paris, while the smaller ones were stowed away in their bulging professorial pockets. As hitherto, the papers announced in the printed programme for the Washington Congress, will be printed in advance to be distributed on the day of presentation, together with the summaries. This time, however, they will appear in *Spanish*, as well as English, French and German, out of courtesy to the Latin countries to the south of us, many of which will send delegates to the congress. The Proceedings, including the special lectures, discussions, and an account of the exhibition, will cover 2,000 pages, and will be ready for distribution by the close of 1908. Active members, who pay a fee of five dollars, attend the congress, vote, and get copies of the Proceedings. Associate members, paying two dollars, attend the congress and its social functions, but neither vote nor receive copies of the Proceedings. Several prizes of a thousand dollars each are offered as awards for special work against tuberculosis. In a city like the capital, Washington, where the chivalry of the nation should find opportunity in the social functions for the pleasure of distinguished foreigners attending the congress, we may well vie with French gentility displayed in the congress of 1905.

The chief opportunities for veterinarians attending such a congress, apart from specialized knowledge obtained, the books distributed, the exhibition seen, are: the widening of the intellectual horizon of the individual, the view one gets of the disease as a national horror and of its international bearings as a menace to all peoples under every sky; the chance of seeing and hearing the most distinguished savants, medical and veterinary, of noting how tuberculosis endangers the food supply of man and beast in a multiform manner, of knowing why such pronouncements as those of Koch in 1901, and von Behring in 1905, astonish and transfix the world. The man who attends such a congress, and is caught up by its inspiration, cannot help but rise on stepping stones of his dead self to higher things.

THE FIGHT AGAINST BOVINE TUBERCULOSIS WITH BOVOVACCINE AND THE RESULTS.

BY DR. W. JUNGCLAUS, DANZIG, VETERINARIAN AT THE BACTERIOLOGICAL INSTITUTE OF THE BOARD OF AGRICULTURE FOR WEST PRUSSIA.

Translated by Dr. Wilford Lellmann, Professor at N. Y. University.

When we review the results of the last few years, we must concede that considerable progress has been made in the battle against tuberculosis or "perlsucht" of cattle.

The methods of Ostertag and Bang, employed for years in East Prussia, Pommerania, Holstein, Brandenburg and other provinces, have prevented the dissemination of tuberculosis; indeed, the percentage of tuberculous animals in these herds has materially decreased year after year. These methods, however, have so far not been able to really exterminate tuberculosis, but merely have diminished the number of infected animals, and brought the farmer to a realization of the extent of tubercular infection in some herds. Both these methods have once been aptly designated as mere "outpost skirmishes" in the war against tuberculosis.

About three and a half or four years ago vaccination against "perlsucht" was inaugurated by von Behring, of Marburg, the renowned German investigator and discoverer of tetanus and diphtheria antitoxin. He produced a vaccine called Bovovaccine, consisting of human tubercle bacilli, attenuated to such a degree as to be incapable of producing tuberculosis. The vaccine is absolutely harmless for cattle, and only perfectly healthy calves, two to twelve weeks of age, are to be vaccinated. During this period of life calves may be bovovaccinated for the first time, and after three months the second inoculation is to be performed; a few weeks later the vaccinated animals become immune against tuberculosis.

In stables with infectious pleuro-pneumonia, it is advisable to first treat the calves to be vaccinated with pneumonia serum, and to place them in well ventilated stables; the calves are to be bovovaccinated only after they have made a complete recovery, which takes place, as a rule, before the calves are three months of age.

This vaccination has proved eminently successful, not only experimentally, but in practice as well. It is of special interest that a number of practical experiences, covering a period of over three and one-half years, were made in Germany, and the highly satisfactory results prove conclusively that we have now at our disposal a remedy which, when used early in life and in healthy animals, will prevent infection with "perlsucht."

The largest number of vaccinations—about 4,000—were performed on the estates of Counts Schwerin-Goehren and Wolfs-hagen, by District Veterinarian Dr. Ebeling, of Woldegk, in Mecklenburg. The younger generations of the herds on these estates are now practically free from tuberculosis, at least only a very insignificant percentage are now reacting to the tuberculin test, while three and one-half or four years ago 80-100 per cent. responded to tuberculin.

Furthermore, all necropsies performed so far have demonstrated that the vaccinated animals are free from tuberculosis. Insignificant tubercular foci were found in a few instances, but the very condition of these foci proved that they were the result of an infection which occurred prior to the bovovaccination. It was also demonstrated by the condition of some of these tubercular foci (caseation and calcification) that bovovaccine exerts some curative influence on small tubercular lesions. Bovovaccine, therefore, is not only a preventive against tubercular infection, but, to a certain degree at least, also a curative agent.

For over three and a half years inoculations with bovovaccine have also been performed systematically, on the estates of Prince Ludwig of Bavaria, in Sarvar, Hungary, by Dr. Strelinger, and according to most carefully compiled records, his results have

also been most gratifying. Furthermore, bovovaccination has been practised extensively on the estates of Archduke Frederick of Austria, in Teschen, and of the Prince of Fuerstenberg.

Foreign countries, too, have adopted the use of bovovaccine, and noteworthy results have been recorded in Belgium, Holland, France, Russia, America and Japan. Of special interest, however, is the fact that the Archduchy of Hesse has officially adopted bovovaccination, and it is practiced there systematically under the direction of Prof. Dr. Lorenz, the well-known discoverer of the vaccine of swine plague. In Hesse, therefore, every calf is being bovovaccinated under state control, and the authorities must be firmly convinced of the efficacy and harmlessness of bovovaccine, otherwise they would hardly have taken these steps.

I could enumerate a long list of estates in Silesia, Saxony and East Prussia, where bovovaccination has been in vogue for a number of years, and according to oral and written reports the results have been very satisfactory everywhere.

The Bacteriological Institute of the Board of Agriculture for Schleswig-Holstein states in its last annual report, that none of the calves vaccinated in 1906, have suffered from any untoward after-effects, and are in a very satisfactory state of health at present.

For some time bovovaccinations are being conducted under the auspices of the Bacteriological Institute of the Board of Agriculture for West Prussia. Several hundred animals have been vaccinated, no fatalities have occurred, and the proprietors are well satisfied with the present state of health of the animals.

Judging from the number of applications received thus far, bovovaccination in West Prussia will assume such vast proportions during the ensuing year, that the force of the Bacteriological Institute is liable to prove entirely inadequate. The institute, therefore, advises the proprietors to have the bovovaccinations performed by private veterinarians.

THE smallest bird's egg is that of the tiny Mexican humming bird. It is about the size of the head of a pin.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

SOME INTERESTING CASES.

BY SIMON J. J. HARGER, V. M. D., VETERINARY DEPARTMENT, U. OF P.,
PHILADELPHIA, PA.

Rupture of the Tendo-Achilles in the Dog.

Complete rupture and overstretching or partial rupture of the cord of the hock or tendo-achilles (perforato-gastrocnemius tendon) is frequent in the dog.

Case 1. Black-and-tan terrier. History of falling down a flight of stairs three weeks before.

Symptoms—Lameness in the left hind leg, inability to support weight, excessive flexion of the hock under the body, lowering of the point of the hock and the hip on that side, relaxation of thigh and leg muscles; the enlarged ends of the tendon, separated for a space of an inch, could be felt under the skin; skin intact.

The treatment consisted in making a parallel incision over the tendon, approximating the separated ends with two catgut sutures and suturing the skin wound. A temporary fracture dressing was applied for five days and then replaced by a permanent one. Dressing removed at end of four weeks; lameness gradually disappeared and recovery complete.

Case 2. King Charles spaniel; fell down some steps in the yard. Tendon excessively overstretched and thin.

Symptoms and treatment the same as in case 1, excepting the suturing of the tendons. Recovery complete.

Case 3. Italian greyhound. No history. The symptoms were aggravated; tendon excessively stretched and point of the hock almost touching the ground when bearing weight. With the hock in its normal position, the tendon was relaxed and wrinkled. For this reason considered the advisability of resection and suturing of the perforato-gastrocnemius tendon and

cord of the tebial fascia, but concluded to follow nature's plan and applied fracture dressing. In five weeks the leg was much improved, but far from normal. When seen again six weeks afterward, the recovery, without any treatment, had become complete.

This form of rupture of the cord of the hock is peculiar to the dog, due to the form and function of the leg and relative weakness of the tendinous structures.

Melanosis of the Parotid Gland—Extirpation.

Patient gr. g. 9 years, driven to a baker's wagon. Had a small tumor on parotid gland when purchased two and one-half years before. The parotid gland was hard, lobulated on its surface and enlarged to twice its normal size. By its compression of the jugular vein and its branches it produced passive congestion of the brain with symptoms described by the owner as vertigo. The color of the horse and the physical characters of the enlargement justified a diagnosis of melanin deposits. Whether it was simple melanosis, melano-sarcoma or any other variety of pigmented tumor was not determined with the microscope. Most of these tumors, as seen in the horse, are simple melanosis without any tumor neoformation.

A crucial incision was made over the tumor, the vertical being the longer, and the four flaps laid back. The tumor was carefully dissected from the surrounding structures, the branches of the jugular, including its main branch passing through the gland, and the arterial branches of the external cartorid were ligatured as met. The operation was so sanguinary as to threaten life. Virtually the entire gland was extirpated and all stray masses of pigment were removed. The cavity ciccatrized, leaving little blemish or deformity. Seen seven years after the operation the horse was still doing very satisfactory work and his nutrition was not affected by the loss of the gland, but there is now evidence of recurrence in loco.

Thoracentesis in Acute Pleurisy.

Patient, sorrel gelding, in the practice of Dr. E. W. Powell, of Bryn Mawr, Pa. Showed symptoms of pneumonia. Classical signs on auscultation and percussion, temperature fluctuating from 103 to 105 degrees Fahrenheit, pulse 50 to 70, appetite capricious. Treated for ten days according to routine methods, including revulsive application on the chest, without improvement.

Aug. 27—Horizontal line of dullness between lower and middle thirds of chest on the same level on both sides, absence of vesicular murmur, respiration costal, 40 per minute and labored, temperature 104 degrees. Prescribed cardiac stimulants and diuretics, including digitalis and passium acetate.

Aug. 31—Line of dullness higher on both sides; respirations more rapid and labored. Performed thoracentesis. A small trocar and canula, after proper preparation of the skin, was inserted at the most dependent part of the first intercostal space behind the olecranon muscles on the right side. The fluid was allowed to run until the stream was interrupted by the respiratory movements of the lungs—practically the entire fluid contents. The respirations at once became less labored and the pulse more full and strong. Medicinal treatment continued. The fluid, slightly turbid and flocculent, measured between 3 and 4 gallons.

Sept. 5—The pleural cavities has refilled and the clinical symptoms returned. A like quantity of fluid was withdrawn through the next intercostal space behind. Medicinal treatment continued. After this the exudate did not reform and the horse made a rapid and complete recovery.

This case suggests the advisability of an early aspiration of the chest before the lungs are atelectatic and the exudate has still further irritated the pleura and invited septic infection. All of the fluid can be removed with impunity at one time, at least in recent cases. Under proper asepsis puncture of the pleura is harmless and may be employed unhesitatingly for diagnostic purposes in all species.

Dumminess—Adeno-carcinoma of the Cerebral Choroid Plexus.

B. g., purchased one week ago; taken out under the saddle, refused to move and brought back to the stable with difficulty.

Clinical—Cerebral stupor, sluggish movements with some loss of nerve co-ordination, poor conditions, emaciation, appetite good; showed crossed-leg test, fore and hind. Would not walk and could be taken out of stall or moved from place to place only by backing, which was accomplished with ease. A morbid growth of the cerebral ventricles was diagnosed.

Pathologic—Left cerebral ventricle was filled and distended with an ounce of citrine-colored fluid. The place of the choroid plexus was occupied by a dark-brown, flat, cauliflower-like mass, $\frac{3}{4}$ inch thick and $1\frac{1}{2}$ inches in diameter. The interior areola were filled with a gelatinous substance. The cerebral cortex was thin and atrophied from the intraventricular pressure.

Dr. D. J. MacCarthy reports: The original site of the plexus showed nothing of the normal arrangements, but a picture revealing the papillomatous growth, or more correctly, an adenomatous arrangement of a racemose gland. The structural work is composed of connective tissue growing from the surrounding blood vessels. The connective tissue is present only in very small amount between the acini. The cells of the acini are the cubical cell with small round, deeply staining neuclei, following the type of the open dymal cell. Here and there the acini are filled with a hyaline material. It reacts the same as the gelatinous exudate met with in other pathological conditions of the ependymal lining of the ventricles. Adeno-carcinoma of the choroid plexus was heretofore unknown in man and the lower animals.

SYMPTOMS OF RABIES IN THE LIVING DOG.

(Continued from page 521.)

BY JOHN A. McLAUGHLIN, D. V. S., PROVIDENCE, R. I.

Madison, Wis., October 22, 1907.

Mr. JOHN A. McLAUGHLIN,

159 E. Benefit St., Providence, R. I.:

DEAR SIR—Your letter of October 5th has been forwarded to me here and I take pleasure in answering the questions which you put to me to the best of my ability.

First—Have you ever seen a case of rabies in the living dog?

I have seen at least one hundred cases and had them under observation from early in the disease until death took place, making after death a post-mortem examination, with microscopical study and inoculation into animals.

Second—What ante-mortem proof have you in the living dog of rabies?

To answer this would require a description of symptoms which you can find in any good work on veterinary medicine. The proof is exactly the same in this disease as in most others in the living animal, viz., a collection of symptoms which, once carefully studied, can scarcely be mistaken.

Third—Are the negri bodies alone proof of rabies?

In the present state of scientific opinion, they are. Personally, after considerable experience, I do not doubt their diagnostic value.

Fourth—Are the negri bodies ever found where rabies does not exist?

No.

Fifth.—Are dumb and furious rabies one and the same disease?

They are.

Sixth—Are negri bodies always found in cases of dumb rabies?

As far as my experience goes, yes. In cases of reported failure, it must always be remembered that a sufficient number of sections would doubtless show negri bodies. It is impossible, of course, to examine the whole of a brain in serial sections. Therefore, in the routine examination for diagnostic purposes, certain failures may result, but these do not prove the absence of these bodies from the brain.

Seventh—Has any one in the past, or is there anyone living capable of positively diagnosing rabies in the living dog?

This question has been answered largely under No. 2. Certain parasites have in a few reported instances caused symptoms resembling those of rabies. I believe, however, that by an educated man a mistake in the diagnosis of rabies is an exceedingly rare thing. If we should take cognizance of the mistakes made by even the most noted physicians, in the diagnosis of typhoid fever, for example, we would have just as good ground for doubting the existence of this disease as we have for doubting the existence of rabies, and the possibility of a correct diagnosis in the living animal.

Eighth—Who diagnosed rabies in the living dog for Pasteur?

I cannot answer this question positively. He was associated in much of his work with Professor Nocard and other veterinarians of note connected with the famous school of Alfort. Without being able to make a positive statement on this point, I feel sure that Nocard did some of this work for him. At any rate, he was associated with men entirely competent to do this for him.

I would be glad if you would let me know the object of your investigation, because requests are frequently made for such information for motives which are not entirely creditable. In

using what I have said I must request that no part of it be extracted. Either use all of what I have given or none at all. I am,

Very sincerely yours,

MAJYCK P. RAVENEL, M. D.

I wish to refer REVIEW readers back to case VI. This was a *positive* case. Yet the dog who caused the negri bodies in his brain is still very much alive and well, and the boy is just as free from any ill effects from being bitten as though he had taken the Pasteur treatment, possibly better. One of the things which I think will be proven, if other veterinarians will collect data on this most important subject, is that negri bodies are found in dogs which have not been bitten. One case, of course, proves nothing, as this dog may possibly have been bitten twice, and nobody be aware of it, but if one hundred veterinarians would investigate thoroughly the question would be settled.

There is another point of interest which can be cleared up in the same way, and which can be cleared up in no other way, which relates to the seriousness of these bites in the human. My experience, so far, leads me to believe that *the bite of a rabid dog is just as harmless as the bite of a non-rabid one*.

Providence, R. I., Jan. 9, 1908.

DEAR DOCTOR—In answer to your questions by mail, I wish to say I was bitten Tuesday, October 15, 1907, on bottom of index finger on left hand. Took treatment (Pasteur, at R. I. Hospital) Tuesday, October 29. Received two injections, one left, one in right abdomen. Made me very sick and weak; so sore and tender that I could hardly breathe, so I refused to continue treatment. Dog that bit mine is very well and still running around. It comes down our street every day to play with Squire's barn dog.

Yours truly,

NORMAN L. BROWN,
8 Cloraine St.

Case X.—Dec. 18th. In spite of the fact that I had seen so many cases of "rabies," I never suspected the disease in this case, so I give the symptoms I saw from memory, as I took no notes.

Dec. 15th. Three days ago, made my first visit to dog in East Providence.

Breed, poodle.

Sex, male.

Age, between two and three years.

Symptoms: Nothing special that I could detect. My attention was called to his bark; it was peculiar. Diagnosed gastritis or gastro-enteritis, due to eating something he had got outside of house. A case of "scavengitis" (my name for the very common swill barrel engorgement of dogs) or else due to swallowing some foreign material, such as pieces of carpets, buttons, rubber nipples, stones, shells, etc., etc. Prescribed olive oil and a digestive powder.

16th—Dog worse.

17th—Worse. He was restless while I was present, would curl up on parlor armchair and bark, the same as I have seen hundreds do who are suffering from bowel trouble or worms. Mouth was slightly open, tongue a darker red, but he drank water and swallowed it without difficulty.

18th—Died 5:10 a. m.

18th—P. M. (post-mortem): Contents of pleural cavity not examined; stomach internally inflamed, contained two small pieces of cloth, one black, about $\frac{3}{4}$ of an inch in length by $\frac{1}{2}$ inch in width, and one of a lighter color, a little smaller in size; otherwise the stomach was empty, except for a brownish mucus smeared over that organ, some of which in proximity of black piece of cloth was black, from the black dye from the black piece of dry goods. Small intestines, inflamed internally pretty well through entire extent, the inflammation being in streaks. There were several small marks, one about one-quarter of an inch in length by a thirteenth in width (measuring by the eye) which I thought must have been done by a sharp body; all the others were much smaller. Very little feces, and what there was was a blackish brown. I thought it was due to blood, but it may have been due to the black die.

Large intestine, inflamed internally. A few inches posterior to ilio-cæcal valve it was dilated for a space of between four and five inches; this dilation was very apparent to the eye, and the walls much thinner, and could be produced only by an im-

paction. It contained a small amount of blackish brown fæces. The remainder of bowel was practically empty.

Lungs—Not examined.

Liver—Darker than normal.

Kidneys—Healthy.

Larynx—Contained some froth.

Trachea—Also contained froth, as far as examined, which was but a few rings.

History.

As I received it while treating patient.

Dec. 15th—First visit. Animal very restless; did not sleep for three nights; vomiting; bowels constipated. I made a digital examination of rectum and found a small amount of soft fæces. Was informed the animal would snap. I thought they meant he was naturally snappy, but he jumped on my lap, gave my mouth a lick and permitted me to scratch his head and neck, and made no attempt to snap.

16th—Had vomited the beef tea I ordered every time it was given. Milk and lime water was substituted, which was retained. The olive oil was also retained. Passed a small amount of soft fæces. Afterwards an enema of two quarts of warm water was administered, but brought nothing away, though later he passed a small amount of *hard fæces*. When I attempted to scratch his head he snapped at my hand but did not draw blood. Prescribed *bromidia*.

17th—Ordered morphine.

18th—After post-mortem was informed that the dog was not naturally snappy by daughter, but had become so since he got sick and would attack the dogs he formerly played with and had bitten one.

Negris bodies were found by bacteriologist in Brown University to-day, December 18th.

Case XI.—Dec. 19th.—Called on owner of dog, Mrs. R., and received the following history. I give it as near as I can from notes taken then and there, in her own words:

Dec. 12th—(As near as she could remember.) Her dog first showed symptoms of trouble; the symptoms were nervousness. Would have nothing to do with the other dogs that he habitually mixed with. He would *spit* at them if they attempted to disturb him. Dog was a spitfire anyway and did not hesitate to attack any dog, large or small, but did not act this way to his usual companions until December 12th.

Dec. 13th—Refused to eat. Gave tablespoonful of castor oil, which he vomited.

Dec. 14th—Nervousness increased, acted wild, crazy, and seemed bound to attack one of his former companions, and was continually desirous to get out of house, and when out to get in. Spit at other companions on less provocation. Tackled one of them. Daughter separated them and the "rabid" one scratched the daughter's hand with teeth.

Mrs. R. lays great stress on the "nervousness" and says when the dog would fall asleep his head would move spasmodically, then his front legs, then his hind legs. She used the word "convulsions" to describe this excessive "nervousness." I put the following questions:

Was he ever bitten? Not that she knows of.

Does he run loose? No; he never was allowed on street without one of the family, and as a rule was on a leash.

How often did you wash him? Twice a week in summer time, and never less than once a week. He was continually in my lap and I was always examining him for fleas. I do not see how he could have been bitten and I not see it. But, of course, anything is possible. He never, in all his sickness, attempted to bite any of the family. He lapped water and swallowed water to the very end.

I wish to add here that I not only never suspected rabies but never suspected that the family did, in this case, but I asked, as a special favor, permission to hold a post-mortem, as I always do in these cases of gastritis, or gastro-enteritis. Having succeeded in getting family's permission so far I thought it a "brilliant" idea—if I could get it—to carry head to bacteriologist. The laugh, so far, seems to be on me.

Mrs. R. asked me if a stomach trouble could produce the change in his bark, and she laid great stress on her question. I answered that any sickness might produce a change in the note of a dog's bark.

I wish to add that I heard him bark on the 15th—my first visit—and his bark was very peculiar; but when I heard him bark on the 17th it was not peculiar, but simply indicated pain. It is my experience that when a dog with a bowel trouble (when it is not due to worms) begins to bark or whine or yelp it usually means death.

RECENT DATA IN VETERINARY SCIENCE.

(Continued from February REVIEW.)

BY DRs. LOUIS A. AND EDWARD MERILLAT, CHICAGO, ILL.

A few words about three formidable fevers, although almost exclusively human diseases, should not be amiss, in view of their significance to all mankind. These are *typhoid fever*, *yellow fever* and *malaria*.

Typhoid fever, caused by the swarming in the blood of the *Bacillus typhosus* which gains admission by way of the digestive tract through the ingestion of food contaminated with colonies of the microbe, according to Eccles (*Med. Rec.*, August, 1906), more frequently incriminates the *milk supply*, *foods previously infested with flies*, *dust* and *other dirt* than the drinking water, which is too frequently blamed without looking farther for a contributing cause. In the drinking water the dose generally ingested is said to be too small to evade the resisting forces of the body of ordinary individuals, but in milk and other foods which furnish media for the growth of the microbe enormous doses may be ingested at a single meal. Fleas, bedbugs, clothing, letters, etc., are believed to be capable of conveying the infection. And finally, there are now the so-called "typhoid bacilli carriers"—individuals who without suffering from the disease themselves continually infect others cohabiting with them. The gall-bladder is frequently infested with typhoid bacilli which sojourn therein for weeks and even years after recovery from an attack of the disease.

The toxæmia of typhoid is due to an endotoxin liberated in the blood from the microbes that have perished and as the poison is not accumulative the disease aborts as soon as the microbes are banished from the blood.

Yellow fever is transmitted by the bite of the *Stegomyia calopus*, but the virus inoculated into the susceptible subject by it has not been discovered. Thayer (*Med. Rec.*, January, 1907), has found certain ameboid forms which have been called *Amæba febris flavæ*, but the results of his researches have not been accepted as final. He himself concludes that additional evidence would be necessary to positively incriminate these unidentified

forms. They should be found in more cases than he has investigated and they should be identified in some guise upon the mosquito itself, before the role they play is definitely settled. However important would be the discovery of the virus of yellow fever, mankind is to be congratulated upon the already well-proven fact that the disease occurs *only* through the intermediary of this special mosquito and only after it has previously infected itself by biting an infected human being. These presents, together with the fact that the *Stegomyia calopus* is only a nocturnal creature, place the prophylaxis upon a definite basis.

Malaria is caused by hematozoa—the *anopheles*—inoculated into the blood by mosquito bites, but the mosquito theory is no longer accepted as the exclusive mode of transmission. While not a single experienced investigator denies the important part played by mosquito bites in malaria the revelations of the past two years show clearly that the disease may sometimes be transmitted by other carriers of the hematozoon—flies, dust-laden food, drinking water, etc. Kelsch (*Bul. de l'Academie de Med.*) reports that among the German troops stationed in malarial districts the epidemics often occur in March before mosquitoes make their appearance and furthermore, the disease gradually dies out toward September when these insects are most plentiful, indicating at once that the insect infection is not alone responsible.

Malaria has never been prominently mentioned in veterinary literature, at least not in America. That it does exist in animals, however, has been amply proven on divers occasions by different continental veterinarians. In certain swampy districts and during certain years the existence of bovine malaria has been frequently reported in Italy, in France and in Germany. (I am unable to lay hands on the articles at the present moment, and only retain a memory of having read them.) Lingard reported the existence of malaria amongst horses in India several years ago and Gugliemi (*Rev. Gen. de Med. Vet.*, January 15, 1908), proves the receptivity of the horse by bacteriological examination of the blood of a horse that died from the disease. This subject belonged to a fisherman and was kept out of doors at night in a low, swampy district, which would lead to the suspicion that it contracted the infection in the same way as human beings—by mosquito bites. As we now know that hematozoa play a significant role in several animal diseases, these reports may serve as a useful hint, in the investigations of those

mysterious endemics that sometimes beggar explanation from the clinical symptoms and from a search for the probable cause. Too often our investigations end with a suspicion—but never a proof—that the feeds are the causative elements of outbreaks of unusual, mysterious diseases.

The Relations of the Teeth to the General Health.—One who reads the medical literature extensively and who stops to compare it in this connection with that of past epochs will be struck with the wholesome interest the medical profession now takes in the study of the teeth. While their treatment is left exclusively to the dentist, the physician now examines the teeth with no less interest on that account, but scrutinizes them in search of causes of ill-health with much greater diligence than a few years ago. The armies and navies of the world have just come to recognize dentistry as indispensable to the welfare of their soldiers and sailors, and the whole medical profession in its research into cause and effect has recently begun to give conspicuous attention in its periodicals to the relations of the teeth to the general well being of mankind. In short, it is now conceded that the economic importance of the teeth to the human race is not a trivial one. Dentistry is prophylactic, corrective, curative, analgesic, beautifying; it is helpful often where random medication has failed; and if its importance is great in human beings it is little less so in domestic animals, although in the latter, partially on account of irrational application, it still lacks scientific consecration.

Men often spend years preparing for college, years at the college, years in the medical and post graduate school and then years as internes in the large hospitals only to prove incapable of effectually coping with the headache, the belly ache or the trivial discomfort of their first patient when they enter practice. In the search for victims for their capital operations they are incapable of appreciating the real importance of trivial causes. While one is deciding upon an appendicectomy the older practitioner administers a dose of castor oil, collects a dollar and the patient goes about his business (*Lancet*). Analogous comparisons may be made in veterinary subjects.

Two observations which recently came to the writer's notice are worth recording. The first, a middle-aged man, who had suffered remittent attacks of facial neuralgia of obscure origin for no less than seven years. Everything failed to relieve him until a dentist, at the cost of fifty cents, extracted a decayed

wisdom tooth and the disease disappeared like magic and never recurred. The second is that of an eight-year-old horse that was mysteriously sick for more than a week with a mysterious indisposition. The patient hung the head, ate little and carried about two degrees (Fahr.) of fever. There were no other symptoms. In spite of the long duration of the ill health no organic disease developed. Finally, by placing the patient in the hospital under constant surveillance a slight aberration of mastication was detected, suggesting at once a severe toothache as a possible cause of the whole trouble, although previous careful palpations of the mouth were negative. Placed upon the table, with the aid of a mouth speculum and electric reflector the molar denture was submitted to a searching examination. Each infundibulum was picked carefully with a fine tenaculum. A very small opening was found in the left fifth superior molar. The suspected tooth was extracted and sure enough upon dissection it was found to be in the siege of an acute pulpitis. There was no marked improvement at first, but two days later, while removing the wadding from the alveolar cavity, an abscess burst from the sinus into the tooth cavity and discharged a pint of foetid, watery pus. Immediately the appetite returned, the fever dropped, and the patient was well.

If unmolested, what is the course of such a disease? The abscess soon points into the sinuses and nasal fossæ and either produces a chronic or intermittent catarrh. Submitted to a veterinarian for treatment, the molars would be pronounced apparently sound and the patient would be trephined, the catarrh treated by irrigations, and finally after two weeks the openings would be allowed to close. For a time the patient is better, there is no nasal discharge, but later, possibly a year, the same foetid discharge returns. A second examination of the mouth by palpation and ordinary inspection still fails to disclose the still integral, but no less offending tooth, and the horse is submitted to a second trephining and irrigation. Again the results are good for the discharge is cured. At some future day, probably after having the scrutiny of more than one veterinarian, behold, a split tooth is discovered. Anyone could diagnose it then; probably the owner did so himself.

The point we wish to raise by relating this case is that the veterinarians involved in such cases in their efforts to theorize logically upon the origin of the catarrh often fail to recognize a plain case of toothache. Oh, yes, dental origin was

suspected sure enough, but there had not been enough common sense displayed to disclose it. If our devotion to animal dentistry results in nothing more than the early diagnosis of toothache in horses, the American veterinarian's penchant for dentistry will not have been in vain, but there are so many other little situations incriminating the teeth, encountered in the routine of a practice that make dentistry as relatively important to the brute creation as it is to the human family.

Vasotomy for "Social Parasites."—Amongst the numerous suggestions, criticisms, and comments I have received since "Recent Data in Veterinary Science" began in the REVIEW, comes a clipping, from our esteemed confrère White, of Tennessee, taken from the *Journal of the American Medical Association*, agitating the somewhat new proposition of unsexing undesirable individuals which was started by the passage of a law in the State of Indiana authorizing the sterilization of confirmed criminals, idiots, imbeciles, etc., by vasotomy.

In Indiana, since the passage of the act authorizing the operation, vasotomy has been performed upon hundreds of inmates of public institutions. It seems that there is little objection to the operation on part of the patient as it is simple of performance, free from harmful complications or sequelae, and does not destroy the sexual desires or sexual powers. It is the simple division of the vasa deferentia and has no other effect than that of blocking the passage of spermatozoa from the testicle to the seminal vesicles. It produces *sterility* without *impotence*, and aims of course at the elimination of degenerate progeny and is undoubtedly the most feasible as well as the most effectual remedy yet proposed in that direction. Its wisdom is, however, questioned from many sources. The operation, known to be trivial, if given wide publicity, may become the successor of illegitimate abortions. Dresteron (*Journal Am. Med. Assn.*, January 18, 1908), predicts its possible dangers in the following words: "When the husband and the illicit lover are told that they can play fast and loose with their vasa deferentia, cutting off the testicular secretion by an operation less serious than the extraction of a tooth, it would be hard to conceive of a recommendation fraught with more far-reaching evil and disaster." With the fear of tell-tale progeny removed there is also danger of increasing adultery and other forms of consenting vice, and rapine and the spread of contagious diseases would remain unchecked. The dissenting prefer castration, while the adherents of va-

sotomy deny the probability of its abuse by the medical profession.

Vasotomy is of no use in domestic animal surgery as there can be no demand in animals for an operation that sterilizes without also dispatching the impelling sexual impulse. Our purposes are served only by castration and vasotomy concerns us only as citizens.

Blood Serum as a New Element in the Study of Immunity.—Since Virchow first expounded his cellular pathology and since Metchnikoff first advanced his theory of phagocytosis, no attention had been given during a decade to the fluids of the body as factors in immunity and autogenic resistance. The study of pathology, especially of septic diseases, was concentrated upon cellular activity; the sera were ignored. To-day, on the contrary, the sera are assuming the most important role, as indicated by the widely accepted opinion that the discovery of the opsonic properties of blood serum is the most important advancement made in the study of sepsis and pathology in general for many years. Among the recent significant medical discoveries opsonins occupy the first rank.

The Horse versus the Auto for the Physician.—Bonninghausen, discussing the relative merits of the horse and the automobile for physicians, in the *Deutsche Medizinische Wochenschrift*, Berlin (December 26), roads and weather considered, decides in favor of the former as the most reliable conveyance. The latter is a nerve-racking, noisy, jarring affair that keeps the occupant under an incessant mental strain not known to the driver of the horse-drawn vehicle. He also says: "It is not so much a question as to how quickly the doctor can get to his patient but that he gets there sometimes, and the horse can be depended upon to get him there sooner or later." Comparing the expense of the two conveyances he finds the horse to be much the most economical.

These conclusions compare favorably with our own observations and experiences. In cities the horse for a time was discarded by almost every physician on account of the greater speed of the auto and in anticipation of greater personal comfort than was thought possible to obtain in a horse-drawn vehicle. From the opinions of several hundred physicians from all over the United States, published in the *Journal of the American Medical Association* during the past year, it is readily seen that the primal object of discarding the horse for the auto was

to save time in transit. "The time spent in going from patient to patient is so much time actually lost," said the auto enthusiast, but eventually it was found that the time actually saved by the greater speed of the auto was not sufficiently noticeable to a family physician whose practice is limited to a radius of a few miles. The little time gained between visits is not adequate compensation for the mental strain of driving an auto, for the occasional (?) annoying delays en route, and for the additional expense, and hence the physician is looking to the horse again, the driving of which, if not a pleasure, is as relaxing to the nerves as the auto is straining and, which can *always* be depended upon to complete the journey without delays, and finally which can be maintained at nominal cost. The prominent physician or surgeon whose services are daily sought in different parts of a large city remote from each other finds the auto indispensable and this class, especially because they can afford to employ experienced chauffeurs, will retain them, while the rank and file of the medical profession is destined to return to the horse.

In country districts, speaking from the experience of several veterinarians who have tried the experiment, the horse will be retained as the physician's conveyance, pending the improvement of the roads which now place autos entirely out of commission for several months of each year. Good roads are absolutely indispensable to the successful employment of the automobile for any business. Bad roads, be it from hills, mud or roughness of surface, will wreck an auto to the junk shop long before the average physician or veterinarian has earned enough to pay for it, and even upon good roads I doubt whether any physician or veterinarian whose income is limited to two thousand to three thousand dollars per annum, is financially able to own and maintain an auto, as a conveyance to and from their patients.

The advisability of purchasing an auto by veterinarians has been considered by many who have found that long drives are the bane of their existences. To my readers who are in this mood and who have such anticipations for the coming spring I would suggest that your decision be based upon the use to which the machine is to be put. If intended to entirely replace the horse, my answer is on the negative side emphatically, but if intended as a pleasure, for your family as well as for yourself, for the purposes of occasionally taking the grief out of a long journey, possibly after an already hard day's work, over a good

road and on a pleasant day in company with merry and congenial companions, and if your financial resources justify, I see no reason why you should not be the owner of a good automobile. An auto of standard make and of consistent price, if used judiciously and for selected occasions, can be maintained at a reasonable cost and should last for years, but if made to endure the hardships of all kinds of weather and roads its life is indeed short and its maintenance costly; too costly for a veterinarian. A veterinary practice may enable one to own an automobile, but the horse-drawn vehicle must previously have earned enough money to purchase it and must be retained to meet the current expense of the luxury. In short, the auto must not be thought of as the universal conveyance for the veterinary practitioner, *aujourd' hui*. The writer qualifies for this testimony by two years of personal experience.

Fatalities from Diphtheria Antitoxin.—Several fatalities supervening the use of antitoxin for the treatment of diphtheria recently reported in medical journals has brought out a manifest anxiety as to the possible frequency of the accident. It seems that since a few fatalities, unmistakably due to antitoxin, have been reported, quite a number of practitioners have been reminded of certain instances of sudden deaths from diphtheria which could not at the time be accounted for. Now that the serum is known to be sometimes dangerous to life and the element responsible for its dangerousness is yet unknown the serum treatment for diphtheria, effectual as it has proven to be, is given a decided set-back. Fortunately, these accidents are rare, but exactly how rare no one is yet competent to report, because the suspicion is a new one. The *Journal of the American Medical Association* editorially devotes two columns to the subject in a recent issue (February 8, 1908), in which, after admitting the importance of the new problem, it is predicted that it is the hypersusceptibility of the patient's serum and not the antitoxin that is at fault. The horse serum, in which the antitoxic element is contained, is suspected as being responsible for the mischief. The suspicion is based upon the fact that pure horse serum injected into controls (laboratory animals) sometimes produces the same symptoms as those which precede death from antitoxin in the human patient.

DR. W. M. CUMMINS succeeds Dr. R. N. Mead as inspector-in-charge, Bureau of Animal Industry, Fort Atkinson, Wis.

ABSTRACTS FROM EXCHANGES.

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

A PECULIAR LAMENESS IN A HORSE [*Mr. Huynen*].—A horse turned out to pasture gets caught in artificial briars and has several wounds on the right hind leg. After the recovery of some of these, that were superficial, the animal remained lame; and only after three months medical advice is looked for. While at rest the animal rests his foot on the toe; from time to time the leg is flexed and raised suddenly as if a sharp pain had occurred. In walking the leg scarcely rests on the ground and the foot touches it with the anterior part of the wall of the foot. The leg is atrophied, specially in the anterior and posterior part, and the sensibility is all gone in those parts. Whatever is the cause of the lameness, the horse is considered as incurable and is killed. At the post mortem were found a fracture of the fibula on a level with the fibulo-tibial arch. The anterior tibial artery was completely obliterated. The muscles of the posterior tibial region had undergone dry necrosis and those of the anterior region were rather sclerosed. The nervous conductivity was interrupted by the presence on the great sciatic nerve by a growth as big as the thumb, pressing on it. All these lesions were attributed to a violent bruise on the superior part of the posterior and external faces of the leg.—(*Annales de Bruxelles.*)

INTENTIONAL PERFORATIONS OF THE RECTUM IN BOVINES [*Jos. Hamoir*].—Sadism is not always the only stimulating cause of these accidents, they are often the result of a revenging intention. For instance: A cow is taken sick suddenly, with serious symptoms and peritonitis being suspected, slaughter is advised and carried out at once. Besides the evident lesions of peritonitis, the causes that gave rise to it are made visible. On the floor of the rectum there is a laceration, measuring three and one-half centimeters, situated about forty centimeters from the anus. Back of it the rectal mucus is ecchymosed and excoriated. An inquiry revealed the fact that a young man, who had charge of the stock, angry against the cow, which, when annoyed with the flies

would become irritated and, by running about, disturbed the whole flock; the fellow, to punish her, had violently introduced the handle of a fork into the rectum of the animal and injured her.

In another instance, which terminated before the courts. Not less than thirteen animals had died with the same symptoms: colics, tympanitis, expulsive efforts, little or no alteration in the pulse or temperature. Post mortem had failed to give any explanation as to the cause of such calamity. Finally the author was called to a dying animal. Post mortem is made immediately and beside the lesions of peritonitis, there was a lesion on the rectum. Two deep wounds perforated the organ. Suspicion was then awakened, and when another cow was taken ill, it soon became a conviction. Another death was followed by the same result at autopsy; peritonitis due again to a large wound of the rectal membranes. Inquiry proved that these wounds were inflicted by a man, who acknowledged that he had done it to revenge himself.—(*Annales de Bruxelles.*)

EPIPHYSIAL TIBIO-FIBULAR FRACTURE WITH RUPTURE OF THE TENDONS OF THE ANTERIOR TIBIAL AND COMMON EXTENSOR MUSCLES IN A DOG [*Prof. Cossens*].—A young pointer dog fell over a child and the result was a fracture of the epiphysis of the tibia and fibula, marked by undoubted symptoms. An injury which is quite common among dogs. A bandage of Delwart was applied and in three weeks the fracture was firmly united. Yet the animal had a peculiar lameness, the articular angle of the tarsus was gone and the metatarsus remained straight in the direction of the tibia, the tendinous cord of the hock was relaxed as is observed in horses suffering with rupture of the flexor of the metatarsus. A careful examination of the hock revealed a rupture of the tendons of the two muscles; the anterior tibial and the common extensor of the phalanges. A bandage of Delwart was applied on the whole leg, from the stifle down, in such a way that the hock joint be kept in a normal flexion and allow the two ends of the ruptured tendons to unite. This bandage was left on for four weeks and when it was removed union had taken place and a perfect action of the leg the result.—(*Annales of Bruxelles.*)

A CASE OF BRIGHT'S DISEASE IN THE HORSE [*Mr. Poulin*].—Light draught horse of seven years with the following history: Since two years he has had, with intermittences, swelling of the hind legs. Slight at first, this has increased lately. Sometimes

the appetite has been poor. Urination is very clear but more abundant than usual. He often micturates, while walking, when at work. Now he stretches often as to urinate, the back is arched. The swelling runs up to the hock, he has light colics. Conjunctivia, pale and oedematous. Nothing wrong is detected by auscultation either in the circulation or respiration. Analysis and examination of the urine revealed the presence of noticeable quantity of albumin and some granular cylinders. There was no sugar, no mucus, no biliary substances. The diagnosis was evident. After a few days there were evidences of comatous uremic poisoning. Digitalis, salicylate of soda, bicarbonate and milk diet improved him temporarily and sufficiently to allow the owner to dispose of him and the author lost sight of him.—(*Annales of Bruxelles.*)

PERINEAL HERNIA IN DOGS [*Prof. Hebrant*].—After passing a review of the peculiar conditions that this affection can present, the author describes the method of operation that he believes the most appropriate to all cases. He proceeds as follows: The animal is kept on low diet for twenty-four hours, anæsthetized, and the abdomen, perinæum, and flank aseptized. The hernial sac is open and thus the diagnosis confirmed, as to the organ which is displaced and contained in the hernia. Whatever these are, they are reduced, and a piece of the sac is excised as large as possible. The edges are then closed by two layers of sutures, one deep with catgut, securing the edges of the peritoneal sac and the other with silk, closing the edges of the skin. Iodoformed collodion is laid over the wound. That is the first part of the operation. The second consists in opening the abdomen on the linea alba, if it is a slut, on the side of the sheath, if it is a male, in the cases where it is the bladder or the uterus that is to be fixed on the walls of the abdomen. If rectopexia is to be resorted to, it is through the left flank that laparotomy is performed. The organ that has been in ectopia being found, a wide portion of its outer surface is scraped with a scalpel, so is a corresponding portion of the peritoneal walls and the two are sutured together with interrupted stitches, passed through the muscular coat of the organ. Five stitches are generally necessary. The wound of the skin is closed also with stitches and the entire wound protected with an iodoformed dressing. Six or seven days are all that is required for complete union of the skin. This method of treatment has already given many good results to the author.—(*Annales of Bruxelles.*)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

TWO ILLUSTRATED CASES OF DISEASE OF THE PYRAMIDAL PROCESS [*W. Willis, M. R. C. V. S.*].—First Case. Aged gray mare reported as having pulled lame while at work the previous afternoon. The foot carefully examined revealed nothing wrong except great tenderness of the foot when hammered to remove and replace the shoe. There is no lameness running straight forward, but when pulled up or turned she was distinctly lame on the near hind leg. There was no distension of bursa in the whole leg, only a small bog-spavin which was blistered. After one month the mare returned to work. Within a week she had another attack of sever lameness which passed off after a few hours. This condition showed itself several times. She kept on getting lame and getting over it. In the interval she had developed thickening round the coronet, at the toe. Neurotomy of the posterior tibial gave her relief and allowed her working until worn out; she was then destroyed. The illustration of her case shows bony mass on the extremity of the tendon of the extensor pedis and calcareous change in the superior broad ligament of the navicular bone.

In case No. 2, it is a bay mare lame on the near hind leg. She had been found lame in bringing her out of the stable and nothing could be detected on examination except a marked soreness when hammered slightly on the foot. Pressure over the insertion of the extensor pedis tendon was painful. After one month she had a well developed swelling on the coronet. Lameness passed off and returned. Three years after she was destroyed. The illustration shows more extensive lesions although of the same nature as the other.—(*Veterinary Record.*)

SOFT CATARACT IN A TERRIER—OPERATION [*W. H. Flook, F. R. C. V. S.*].—Six months' pup was, when three months old, having one eye grayish white; he soon had cataract and the other eye became affected one month later. The operation was by discission. The animal was chloroformed, the eye washed with Chinosol and with a fine cataract needle the cornea was punctured and an incision in the form of a cross, made in the capsule of the lens. The cataract was soft and a white milky substance escaped in the aqueous humor. Twenty-seven days after the

terrier was fairly well, avoiding obstacles. The right eye showed a T-shaped scar of the lens. The left eye had a large rosette-shaped cataract in the center of the lens. Another operation was performed on that eye thirty-one days after the first. After each operation atropine was used. The dog was sold later on and with his sight restored and both eyes completely cleared.—(*Veterinary Record*.)

BOTRYOMYCOSIS OF THE TAIL [*Henry Taylor, F. R. C. V. S.*].—Brown gelding, aged 15, presented three years ago a little lump at the end of the tail. Six months after it was as big as an orange and now it is as large as a cocoanut. It was removed by docking and the hemorrhage that followed was rather difficult to arrest. The tumor was examined by Sir John M'Faydean, who reported it a case of botryomycosis.—(*Veterinary Record*.)

GASTRIC DISTENSION IN A DOG [*H. W. Billingham, M. R. C. V. S.*].—Bloodhound was feeding at 4 p. m.; was noticed to whimper and leave the trough. Has a fight with another dog and is removed in another kennel by himself. About 7 p. m. was heard whimpering, his abdomen is distended and he is trying to vomit; his temperature is 99 degrees. Later the abdomen continues to increase in size and at 9 p. m. it is enormously so; the dog is lying on its side, collapsed, icy cold, temperature 98.2 degrees and pulse about 130. The poor, suffering animal is removed to the front of a fire and placed in a hot bath; massage is applied to the abdomen, eserine and strychnine are given. Temperature gradually rose to 102.2 degrees, but the distension of the abdomen increased, and after howling a few times, the dog died. At the post mortem the stomach was found immensely distended, extending below the umbilical region and almost black in color. It was rotated from left to right on the œsophagus, almost a complete turn, so as to completely close the œsophagus. The duodenum was drawn almost round the œsophagus so tightly as to prevent the escape of gas in that direction. On partially returning the stomach in its natural position, the gas began to rush into the intestines.—(*Veterinary Record*.)

A CASE OF STRABISMUS [*E. Clive Webb, Lieut. A. V. C.*].—Four-year-old black country-bred mule, supposed to be blind. He is very nervous of any sound, immediately turning its head in the direction it supposed the sound is coming from. He carries his head in a peculiar way, viz., with its muzzle slightly depressed towards the breast, or in other words, as if it con-

templated butting. Closer inspection reveals that neither of the pupils are in normal position; about the center of the palpebral fissure; but that the inner half of each is hidden from view beneath the lower lid, just below the angle of the inner canthus. The eyeballs were therefore turned downwards and inwards. The case was one of convergent squint, affecting both eyes. On testing the sight by striking the mule and threatening to strike again, it was found that he could only see and then very imperfectly, when the striking object was in front of him, but not if it was on either side. Both eyes were less prominent, there was no sign of weakness and examination with the ophthalmoscope, although difficult to make, revealed nothing abnormal.—(*Journ. of Compar. Pathol. and Therap.*)

REMARKABLE RECOVERY AFTER REDUCTION OF SCROTAL HERNIA, FOLLOWING OPERATION ON A SUSPECTED CRYPTORCHID [*E. Clive Webb, Licut. A. V. C.*].—Very unusual case in which a horse operated for an unsuccessful searching after a testicle, and during which much dilatation of the inguinal ring had been made, rendering the possibility of hernia likely to follow. It did indeed, and during the necessary manipulations to reduce it and casting the animal to return the mass, the intestine, not less than an armful of the small intestines protruded. After reduction, after cleaning the organ with antiseptic solution, much of which entered the abdominal cavity, finding it impossible to close with sutures the upper inguinal ring, the canal was very tightly and firmly packed with dry wool, filling up every crack and crevice, including the scrotal sac, and then suturing the latter over the plug with strong gut sutures. For two or three days there was some little febrile reaction, but this soon subsided and notwithstanding two or three attacks of colics, the animal finally made a comparative rapid recovery.—(*Journ. of Compar. Pathol. and Therap.*)

INTERMITTENT LAMENESS IN A HORSE CAUSED BY A THORN [*H. C. Stewart, A. V. C.*].—The history of a hunter, which exhibited lameness at various times during two months and finally was brought to the writer with a transverse suppurating wound on the inside coronet of the off foreleg at the junction of the skin and hoof. The wound was about an inch long and was granulating. Antiseptic fomentations and dry bran poultices were prescribed and on the following day at the time of examining the foot there was found, embedded in the wound, a sharp

strong briar. This was extracted and the wound dressed in a usual manner. In three days the animal went sound and remained such afterwards.—(*Veterinary Record*.)

FRACTURE OF THE ISCHIUM [*J. B. Hare, M. R. C. V. S.*].—Bay gelding, six years old, is very lame on the near hind leg. No history is given. He is supposed to have had a fall. Lameness does not suggest pelvic fracture. Animal is placed in a box and hot fomentations applied. After a fortnight about, he can trot fairly sound, but on turning him sharp on either side or in backing he immediately knuckles over at the fetlock. Shown to two other veterinarians, a diagnosis is made of injury to the anterior tibial nerve. A sharp blister is applied on its course. After one month, the animal is greatly improved and the knuckling over has disappeared. However, the owner gets tired and orders him destroyed. The post mortem revealed an imperfectly united fracture of the ischium with a very large callus pressing on the trunk of the great sciatic nerve.—(*Veterinary Record*.)

FRENCH REVIEW.

BY PROF. A. LIAUTARD, M. D., V. M.

FOREIGN BODY IN THE RUMEN OF A COW—GASTROTOMY—RECOVERY [*Mr. Leon Soul*].—This animal is six months pregnant and she is suffering with œsophageal obstruction. Abundant salivation, marked tympanitis, difficult respiration, and the detection of the foreign substance by manual examination of the œsophageal groove. Attempts to push with the fingers the foreign body back upwards in the mouth, failed. It is then that the probang is resorted to and with it without difficulty the stranger is pushed into the stomach. But when the instrument is pulled away, only part of it is drawn, half of it remains in the œsophagus. Only one thing is to be done and after two days of thinking the owner gives his consent to have the operation of gastrotomy performed. This was carried out with all necessary precautions of antisepsy; the rumen being opened on the left flank with the animal in the standing position. The rumen having its incised edges secured to the edges of the cutaneous incision, the author introduced his arm, thoroughly disinfected, into the rumen and feeling for the broken end of the

probang, found it stretched between the walls of the rumen. He carefully pulled it out. Ten Lambert stitches were applied on the rumen and the skin closed after the sewing of the muscular incision, with silk sutures. After the third day the animal began to ruminate, appetite came back, and the recovery was complete in a month. At the end of her time of pregnancy, the cow delivered a fine calf.—(*Recueil de Medec. Veterin.*)

EPIPHYSAR FRACTURE OF THE EXTERNAL ANGLE OF THE ILIUM [*Mr. P. Berton*].—A thoroughbred mare of three years, gets cast in her stall, the rope of her halter being passed round her coronet. She was very excitable and nervous and unsuccessfully struggled a great deal to free herself. It is not possible to help her on account of her struggles and finally exhausted she drops down; the rope of the halter is cut and the mare free, rises, resting the foot on the ground and showing only a little stiffness, with a little erosion of the skin round the coronet. The next day she exhibits much soreness, the left hind leg carries but little weight of the body and the toe scarcely touches the ground. The fetlock, coronet and lower part of the canon are hot, swollen and painful. The region of the hip is also very sore and the seat of a diffuse edema. There is asymmetry of the hips, the left is down. The animal is too nervous for further examination and she is left quiet. Four or five days after the edema has almost entirely disappeared. The hip of the left side is much lower, it has dropped some six or seven centimeters below its normal position and with the fingers the outside shape of the external angle of the ilium can readily be made out. The deformity is well marked; the distance between the internal and the external angles on the right side measures 30 centimeters and only 20 on the left. The movements of the animal are somewhat reduced. Gradually the lameness passes away and is all gone after some time. The deformity of course remained.—(*Revue Generale de Medec. Veter.*)

ENORMOUS POLYPUS OF THE LEFT SINUSES OF A HORSE—REMOVAL—RETURN OF THE GROWTH [*Mr. A. Strullet*].—The long history of a case occurring in a 12-year-old horse, which was operated by wide opening of the sinuses of the left side with great loss of facial bones, and was found involving all the cavities of that side. Although the operation was very severe, that much tissue had been involved and had to be removed, that a complication had necessitated the operation of tracheotomy, the animal made a kind of recovery in which the large wound had

healed and closed. The animal was about considered as cured when, some three months after, he presented symptoms which indicated the return of the old trouble. He was destroyed. The examination of the head showed that all the sinuses, as far as the most remotest cavities, were filled with the neoplasm. The inferior maxillary sinus, the superior, the frontal and also the ethmoidal volutes. The growth was adherent to the bony walls of the sinuses but not to the septum nasi. The tumor was hard, but easily incised; it weighed altogether 1,015 grammes—over two pounds. Examined with the microscope, it exhibited the structure of a fibro-sarcoma.—(*Societe Veteri. de Lyon.*)

FOREIGN BODY IN THE ŒSOPHAGUS OF A DOG—ŒSOPHAGOTOMY—RECOVERY [*M. M. P. Leblanc and L. Auger*].—This animal presents all the symptoms of œsophageal obstruction, and in the jugular groove and of the right side, the foreign body is readily detected by taxis. From information given, the condition exists since two days. The animal is put to sleep, the skin of the right side is shaved and aseptized and the operation is performed exposing the organ, already very much altered, ecchymozed and infiltrated, but not perforated. It is carefully opened and the foreign body extracted. It is a large piece of cervical vertebrae of a bovine; rough, and with sharp points on its surface. The wound was closed, the animal put on liquid diet and recovery complete in twenty-five days.—(*Journal de Zootech.*)

ŒSOPHAGEAL JABOT IN A HORSE—RENAL CALCULUS [*Mr. E. Forgeot*].—This was a kind of post mortem surprise, as it was found in examining the cadaver of an animal, which was to be used for the practice of dissection by students. In opening the thorax, there was found a dilatation of the stomach, extending from the posterior aorta to the diaphragm and situated between the two layers of the mediastinum which was perfectly normal. This dilatation measured 18 centimeters in length, 21 in circumference and had two curvatures convex. There was considerable thickness of the muscular coat, but no laceration, as is usually found in other jabots. The mucous membrane had longitudinal and transversal folds and was also much thickened. It was almost adherent to the muscular coat, contrary to what exists in normal condition. There was no laceration, no contraction or sclerosis and no hernia of the mucous. Besides this very interesting lesion a large calculus weighing 35 grammes was found in the pelvis of the right kidney.—(*Journal de Zootech.*)

CIVIL SERVICE EXAMINATIONS.

VETERINARIAN.

The United States Civil Service Commission announces an examination on March 11, 1908, at the places mentioned in the list printed by the Commission, to secure eligibles from which to make certification to fill a vacancy in the position of veterinarian, \$100 per month, Quartermaster's Department at Large, Philippine Islands, and vacancies requiring similar qualifications as they may occur in the Philippine Islands.

The examination will consist of the subjects mentioned below, weighted as indicated:

<i>Subjects.</i>	<i>Weights.</i>
1. Letter-writing	10
2. Veterinary anatomy and physiology	20
3. Veterinary pathology	20
4. Veterinary practice	40
5. Training and experience	10

Total 100

Applicants must indicate in their applications that they are graduates of reputable veterinary colleges.

Age limit, 20 years or over on the date of examination.

This examination is open to all citizens of the United States who comply with the requirements.

This announcement contains all information which is communicated to applicants regarding the scope of the examination, the vacancy or vacancies to be filled, and the qualifications required.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in the list printed by the Commission, for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

ARMY VETERINARY DEPARTMENT.

OPERATIVE TREATMENT OF EPIZOOTIC LYMPHANGITIS.

In the AMERICAN VETERINARY REVIEW of August, 1905, Dr. W. P. Hill, 12th Cavalry, corrected a statement made by me in reviewing Captain Pallin's treatise on epizootic lymphangitis, which was to the effect that horses affected with this disease in the Philippines do not ordinarily show the extensive lesions on the shoulder described by Pallin as occurring in British India. Dr. Hill upheld Pallin and presented an interesting photograph of a diseased Philippino pony, proving his contention.

I made a note of Dr. Hill's correction for future study in these islands. Since my second term of service here I have on record eighteen (18) cases of the disease affecting horses of this regiment and mules of the Quartermaster's Department. Of these eleven affected the hind legs; two the flanks and abdomen; one the submaxillary region extending up to the cheeks and eyelids; one the lips, nose and nasal mucous membrane, and three the shoulder and neck. I was pleased by Dr. Hill's correction, as by such we detect our personal errors, but the above statistics hardly decide the point in his favor as regards this military station.

Since the disease has now appeared in the state of Pennsylvania, as reported in these columns, it may be of more general interest than formerly to describe at least the operation, treatment and its result of one such case, on account of its experimental proceeding.

The affected horse was received at the regimental veterinary hospital on February 6, 1906, with a beginning affection on the right shoulder. After isolating and watching the animal for study, the shoulder presented, on March 4, 1906, cord-like enlargements of the lymphatic vessels about 16 inches long and somewhat radiating, with six open lymphangitic buds. Operation could no longer be delayed, and Veterinarian Kelty, Quartermaster Department, and myself agreed to operate "half and half" by the two principal methods used here; he by dissecting

out about one-half of the diseased lymphatics, and myself by simply splitting the other half and applying actual cautery. His part was neatly done, but took some time and left a rather long and deep open wound which had to be stitched; while my part



SCARS ON SHOULDER FROM OPERATION FOR EPIZOOTIC LYMPHANGITIS.

was roughly done with an ordinary heavy line-fire iron, leaving the wound open but protected by the artificial covering made of burned tissue.

Both methods were successful, but the cauterized section healed about ten days earlier than the dissected portion. There had always been a good deal of discussion among veterinarians here about the various methods of operation, each having his preferences according to personal successes attained. We in the army must find a simple, quick and effective method, because in the field we cannot carry with us fine operating cases, operating tables, Paquelin's cautery or other modern paraphernalia. The operation treatment by *two methods on one horse* proved that the ordinary firing iron is still a simple and effective instrument, and the results attained by its use preferable to those by dissection with a knife.

The horse was discharged for duty on April 26, 1906, has done duty ever since, has never had a reaction, and only large scars remain, which plainly indicate the original field of affection. The accompanying photograph of the shoulder of the horse as it appears to-day will help to understand the brief description of the morbid condition "before and after treatment."

There can be no doubt that the cryptococcus of Rivolta is a genuine tropical vegetable parasite and that it will always be with us here, certainly as long as we are ignorant of where it comes from. There can also be little doubt that while prophylactic measures taken here have perceptibly decreased the number of cases, yet they assume more and more the severer types so well illustrated by Pallin. The ordinary microscopic study of the parasite is easy and fascinating, and a microscopic diagnosis can be made without staining after one has become thoroughly familiar with the germ. For garrison duty, however, staining is much preferable. We here use Tiedeman's stain, which brings out the big, glistening and round bodies with a fine pictorial effect.

OLOF SCHWARZKOPF, D. V. M.

The above description of Epizootic Lymphangitis is correct, as I had the pleasure of seeing the horse on my arrival here.

WALTER R. PICK, Veterinarian, 1st Cav.

Camp Stotsenburg, Pamp. P. I., January 8, 1908.

UNDER the regulations of the meat inspection service of the B. A. I. it is permissible to prepare chitterlings for food purposes provided the product is thoroughly cleaned and is sold as chitterlings; but it is not permissible to convert chitterlings into other edible products to be disposed of under another name.

CORRESPONDENCE.

UN SOUNDNESSES IN HORSES.

A List of Show-ring Disqualifications to be made by the United States Department of Agriculture.

Chicago, Ill., Feb. 10, 1908.

The Editors of the American Veterinary Review:

GENTLEMEN: The following circular letter, which has been sent out to many, should command the attention of every veterinarian in the country:

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY.

WASHINGTON, D. C., January 11, 1908.

DEAR SIR:

The Bureau wishes to obtain a consensus of opinion from leading veterinarians on the unsoundnesses in horses, which may be regarded as sufficient cause for the disqualification of animals in the showing of judges at fairs and horse shows. No list of this kind has been prepared for use at American shows, and it is thought that a statement by the Bureau, based on the widest possible authority, would be of great educational value to exhibitors and very helpful to judges at exhibitions where official veterinarians are not employed in the ring.

I shall appreciate it if you will send the Bureau, at your early convenience, a statement showing, in your opinion, what unsoundnesses should be placed on the list.

Very respectfully

(Signed) A. D. MELVIN,
Chief of Bureau.

In this country the standards of excellence, for the different breeds and types of horses, have never yet been settled. Such standards not having been made, there have never yet been pub-

lished lists of disqualifications barring horses from prizes in the show ring because of the deficiencies of abnormalities. Yet, among veterinarians, breeders and dealers, there has always been a feeling of unrest in this matter and a general belief that agreement could be reached on standards of excellence, and disqualifying deficiencies or abnormalities, for the different breeds and types of horses.

Such standards of excellence and lists of disqualifications which, though personal opinions in forming judgment will always enter, could be generally agreed upon, has long been sought after.

Previous to 1904 there was a "Committee on Excellence and Soundness" in the American Veterinary Medical Association: which, at St. Louis, when the association met there in the World's Fair year, made a report in which it appeared that the members could not reach agreement on standards of excellence and soundness, and, lamentable as it was, asked to be discharged. In fact, it was too much to ask of a committee, consisting of two worthy members, one a prominent private practitioner, the other an equally prominent professor of veterinary medicine to settle the question of excellence or soundness in such varied types as the draught horse, roadster or saddle horse, or in the various breeds, from the Belgian or shire to the Shetland.

Yet the following year, 1905, witnessed the passage of the first State law, ordering the licensing of stallions standing for public service, requiring them to be examined for soundness by a veterinarian before license would be granted, and commanding State registration of such animals. Wisconsin was the pioneer in this work, and at the instance of Dr. A. S. Alexander, Professor of Veterinary Science in the University of Wisconsin, in 1907 the State legislature passed a law giving the right to revoke stallion licenses for cause and stipulating the hereditary, transmissible or communicable diseases which should be deemed sufficient to warrant rejection of stallions, having them, for breeding purposes. Dr. Alexander was the man who inaugurated the movement, and his efforts bore fruit in the passage of the two wise laws. As a result of the initiatory work of Wisconsin, Pennsylvania, Minnesota and Utah have lately passed similar statutes, while like measures are pending in other States.

The formation of such statutes under veterinary advice and their administration under veterinary direction, crowds upon us more and more the necessity of determining standards of excel-

lence and soundness in the different breeds and types of horses; and the deficiencies or abnormalities which should exclude a stallion from service as a breeder, or a horse of any given breed, type or class, from awards in the show ring. The ground will have to be gone over very thoroughly. The benefits to the horse industry to be derived from such agreement must be obvious to every student of zootechnics. What Dr. A. S. Alexander has done in Wisconsin for the improvement of breeds and perpetuation of good qualities in the horse industry of his State, by the exercise of the rigor of the law and the education of horsemen through his pictorial works, published by the State, "The Principles and Practice of Horse Breeding" and the "Horse Breeding Industry of Wisconsin," might be done on a larger scale throughout the United States, if standards could be agreed upon and if we would abide by the tenets established.

The Bureau of Animal Industry of the Department of Agriculture proposes to make a statement, based on the widest possible authority, on unsoundnesses of horses which may be regarded as sufficient cause for disqualification of animals from awards at horse shows and fairs. As usual, this Bureau is aware of present needs. The unsettled opinions on unsoundnesses in horses; the need that standards of excellence be established, in order that high-class breeding be encouraged and that the production of poor stock be discouraged; the initiatory legislation, looking towards standardization; the proven benefits of such standards to the horse industry, all point to the desirability of the work proposed by the Bureau of Animal Industry. If that Bureau should issue a special report on the subject, richly illustrated, to show all the different unsoundnesses that it is possible to present pictorially, by the aid of the engraver's and lithographer's art, standard types of horses for different purposes, the patterns of the various breeds, including extensive textual information on deficiencies and abnormalities likely to occur in solipeds which may appear at horse shows and fairs, together with points of excellence and soundness and suggestions on standard score cards, the popularity of such a volume would be hardly less than the "Special Report on Diseases of the Horse," which has run through several editions. We need such a volume. We need it badly. Professors of veterinary medicine, of animal industry, private practitioners, veterinary and agricultural students, judges in show rings and at state, county or town fairs, breeders and dealers in horses will come to look upon it

as a guide. The stock of knowledge now possessed by leading veterinarians on unsoundness in horses would, in such a volume, become the possession of the whole profession and would be in a high degree edifying to us all. The men who have this special knowledge are under moral obligation to contribute to this cause of industrial and professional betterment. As the French put this thought, succinctly, *noblesse oblige*.

D. ARTHUR HUGHES, Ph.D., D. V. M.

DECLARING HIMSELF.—“Michael, here’s your frazzled oats.”

“Me good woman, I’ve had nawthin’ but frazzled oats fer a month handrunnin’. Can’t ye think of nawthin’ but oats?”

“You’re a brute!”

“That may be, Bridget, but I’m no harse.”—(*Louisville Courier-Journal*.)

THE Massachusetts Board of Registration in Veterinary Medicine reports that a warrant has been issued for the arrest of George G. Webster, for the illegal practice of veterinary medicine in that commonwealth, and that Webster, learning of the same, has left Massachusetts, and now is undoubtedly practising in other states.

B. A. I. APPOINTMENTS AND CHANGES.—During the month of January appointments of veterinary inspectors, and changes among veterinary inspectors, were made as follows: 18 new appointees, all assigned to duty at Chicago; 4 promotions, 30 transfers within the bureau service, 2 resignations (both temporary appointments), and 9 whose services were terminated, all of whom were temporary appointees with the exception of one whose appointment was revoked.

THE RIGHT CAR.—A traction company in a Tennessee town is still using the cars bought for their line when it was constructed—some fifteen years ago. Naturally the shaky old cars cause much disgust to those who have to ride in them.

A merchant of the town was particularly vexed recently when the motorman ran his car half a block past him before stopping. As he ran to catch it he yelled out:

“Can’t you even stop your blooming old freight train on the corner?”

“This is no freight train,” replied the conductor. “It’s a cattle car. Aboard!”—(*Judge*.)

SOCIETY MEETINGS.

SOCIETY OF COMPARATIVE MEDICINE, NEW YORK STATE VETERINARY COLLEGE, CORNELL UNIVERSITY.

OBITUARY RESOLUTIONS.

ROSCOE R. BELL, D. V. S.

Whereas, We, the members of the N. Y. S. Veterinary College, have recognized in the late Dr. Roscoe R. Bell a sincere and beneficent friend to all veterinary students, and

Whereas, It has pleased Almighty God to call him away at the zenith of his professional career, and

Whereas, The N. Y. S. Veterinary College recognizes in his death the loss of one of the most zealous and able men of the profession, be it

Resolved, That the sincere sympathy of the Society be tendered to the bereaved family, and

Resolved, That these resolutions be spread upon the records of this Society and a copy be transmitted to the AMERICAN VETERINARY REVIEW.

Committee. { A. B. EDMONDS, '08,
 { J. MCCARTNEY, '09,
 { L. L. PARKER, '10,

Ithaca, N. Y., February 19, 1908.

THE ALPHA PSI FRATERNITY, KANSAS CITY VET- ERINARY COLLEGE.

On the evening of February 1, 1908, the Delta chapter of the Alpha Psi fraternity was installed in the Kansas City Veterinary College.

The installation was held at the Midland Hotel, and was under the direction of Dr. George W. Gillie, the national treasurer, from Ft. Wayne, Ind. Following the installation services

there was a banquet which was highly enjoyed by all. The toasts were admirably rendered and were strongly savored with that spirit which tends to elevate the veterinary profession.

The Chapter consists of 19 active members, ten being chosen from the senior and nine from the junior class. Honorary members were chosen from the faculty.

ROBERT E. WAIVEAR, *President*, K. C. V. C.

RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

The fifth annual meeting of this association was held at the hospital of Drs. Dunn and Sullivan, on Jackson street, Providence, R. I., Tuesday, January 28, 1908.

The meeting was called to order by Pres. McLaughlin, and the following members responded to their names: Drs. J. S. Pollard, L. T. Dunn, J. A. McLaughlin, C. T. Frey, U. G. Richards, G. L. Salisbury, J. T. Chorlton and T. E. Robinson. Visiting veterinarians, Dr. C. H. Playdon, Reading, Mass., and E. J. Sullivan, Providence.

After the reports of the various committees the election of officers for the year ensuing resulted as follows: Dr. C. T. Frey, River Point, president; Dr. F. de M. Bertram, Newport, first vice-president; Dr. L. T. Dunn, Providence, second vice-president; T. E. Robinson, Westerly, secretary; J. T. Cunningham, Providence, treasurer.

Dr. E. J. Sullivan, O. V. C., 1907, was elected to membership.

The next meeting will be held in June.

T. E. ROBINSON, *Secretary*.

THE VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of the above society was held in the office of its president, Dr. Thos. Frazer, Richmond, Va., January 8, 1908, at 10 a. m.

After the reading and adoption of the minutes, many interesting papers were discussed on the treatment of certain diseases of the horse and dog.

A great part of the time was taken up in discussing the inadequacy of our state law regarding the practice of veterinary medicine and proposing amendments. The said amendments were presented as resolutions, and a committee appointed to present same to the Legislature, now in session in Richmond, Va.

The next feature of the programme was the election of officers, which resulted as follows:

President—Dr. S. C. Neff, Staunton, Va.

Vice-President—Dr. G. C. Faville, Norfolk, Va.

Secretary-Treasurer—Dr. W. G. Chrisman, Charlottesville, Va.

At the conclusion of the election the following gentlemen, Drs. S. C. Neff, H. S. Willis, H. Bannister and J. G. Ferneyhough were recommended to the Governor for state examiners.

Meeting adjourned to meet in Norfolk, July 17, 1908.

W. G. CHRISMAN, *Secretary*.

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

The first meeting of this association for the year 1908 was held on January 22, at 514 Ninth street, N. W., Washington, D. C. Twenty-four members were present. The secretary presented his annual report in which he stated, among other things, that the membership was forty-four, a gain of about fifty per cent. over the membership for the year ending December 31, 1906; that the average attendance was about sixty per cent., and at some meetings the attendance was about eighty-seven per cent.; that the financial condition of the association was highly satisfactory; that through the efforts of the association the bill regulating the practice of veterinary medicine in the District of Columbia was enacted into law, and that the board of examiners authorized by that law is composed of members of the association; and that the recommendations of the association with reference to the compulsory tuberculin testing of dairy cattle furnishing milk in and for the District of Columbia were receiving serious consideration by the law-making powers.

The annual election of officers was then held and resulted in the selection of the following:

President—Dr. John Lockwood.

Vice-President—Dr. A. M. Farrington.

Secretary-Treasurer—Dr. F. M. Ashbaugh (re-elected).

Trustee—Dr. John Rome (re-elected).

The above, with Drs. J. P. Turner and W. P. Collins, trustees, constitute the official body of the association.

Dr. C. B. Robinson addressed the meeting on the affection among fire department horses called Sonus Neurosis, or "Gong Lameness."

F. M. ASHBAUGH, *Secretary*.

CHICAGO VETERINARY SOCIETY.

At the November meeting of the Chicago Veterinary Society officers were elected as follows: A. C. Worms, president; S. S. Baker, first vice-president; W. F. Scott, second vice-president; Ed. Merillat, third vice-president; D. S. Jaffray, Jr., treasurer; J. M. Parks, secretary. Board of Censors—Dr. Jas. Robertson, Dr. W. F. Scott, Dr. W. F. Kaiser.

The election was followed by an enjoyable banquet and social evening, no papers being presented. As the Illinois Veterinary Society met in Chicago the first week in December, it was decided to meet in January, 1908; but owing to the illness of our president, A. C. Worms, no meeting was called that month. The February meeting was held in the Sherman House parlors, February 11, 1908, at 8.30 p. m., President A. C. Worms in the chair. In opening the meeting the president said he felt very much encouraged to see so many members present, and the excellent talent for the evening's programme; extended a hearty welcome to the visitors, and he thought the prospects were bright for many more such well attended, interesting meetings for the balance of the winter.

Among the visitors were: H. O. Ramsey, Phoenix, Ariz.; C. A. Babcock, New Rockford, N. D.; J. P. Foster, Huron, S. D.; H. J. Hagerty, Dubuque, Ia.; P. J. Cass, 349 Michigan avenue, Chicago, Ill.

Roll call was dispensed with. Minutes read and approved.

Unfinished business. Appointment of committees:

Literary and Publication—A. H. Baker, L. A. Merillat, Jos. Hughes.

Legislation—Robert Walker, Ed. Merillat, E. L. Quitman.

Entertainment—J. M. Parks, D. S. Jaffray, Jr., Geo. P. Frost.

The following candidates were elected to membership: W. F. Kaiser, M. D. C., class of 1904, Chicago; J. F. Seiter, M. D. C., class of 1905, Chicago; P. Lester Grubbs, M. D. V., class of 1907, McKillip.

The first paper on the programme was by Prof. A. H. Baker. Subject, "Acute Bronchitis in the Horse." A scholarly and practical paper, which was listened to with great interest, and brought out an animated discussion and exchange of views by many present. Next followed a paper by Prof. L. A. Merillat on a variety of conditions. First, "Dislocation of the Patella in the Horse." This subject the doctor classified under three heads, viz.: Pseudo, Real and Congenital Luxation. Second, Numerous Foreign Objects Found in the Equine Bladder. As usual, the doctor's paper was full of practical, up-to-date material for thought and suggestions. A long, interesting discussion followed in which nearly all present took part. Dr. E. L. Quitman was next on the programme, subject, "Nux Vomica," but owing to the late hour it was decided to postpone this paper until the next meeting, March 10, 1908.

Under new business—It was moved by Dr. L. A. Merillat that the president appoint a committee of three to draw up resolutions of condolence on the death of Dr. Roscoe R. Bell, of Brooklyn; that a copy of same be sent to his nearest relatives and another kept on file. Carried.

Adjourned at 11.25 p. m.

J. M. PARKS, *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

The February meeting of this association was held in the lecture room of the New York-American Veterinary College, 141 West Fifty-fourth street, on the evening of February 5, with the president, Dr. Grenside, in the chair. There were 29 members and visitors present. After the usual business was disposed of Dr. E. A. A. Grange, of New York City, was called on to present his paper on "The Flow and Reflow of Nervous Impulses in the Cause and Cure of Disease." The paper proved to be one of great interest and opened up a new field for investigation as to the influence of the nervous system

on certain forms of lameness. He cited some very interesting cases of lameness among fire horses apparently induced by the sound of the fire gong. The doctor also believed that the great benefit derived from the injection of air into the udder in cases of Parturient Apoplexy was due in a great measure to the nervous impression made upon the nerve endings and conveyed to the central nervous system, inducing a flow and reflow of nervous impulses.

This paper will soon be published in the AMERICAN VETERINARY REVIEW, when it may be fully digested.

Dr. J. E. Ryder, of New York City, gave a very interesting account of some experiments on horses with the use of Nuclein. He has experimented with cases of influenza and pneumonia, principally. The doctor has employed the drug intravenously, subcutaneously, and by the mouth, and had come to the conclusion that the intravenous injection was by far the best method to employ. He mentioned the peculiar action which would occasionally follow the injection of Nuclein, the so-called "knock-out" effect which was very startling. He stated that this phenomenon seemed to bear no relation to the size of the dose or to the condition of the animal at the time of injection, but that he had noted that those which exhibited this peculiar effect generally made a more rapid recovery than others.

Dr. Ryder stated that the ordinary dose, as administered by him, was 10 c. c. of Nuclein solution combined with 10 c. c. of normal salt solution, injected intravenously. Generally three doses were necessary and he considered it important that the first should be administered early in the attack to get the best results.

In summing up, Dr. Ryder stated that the contemplated further experimentation with the use of Nuclein, and that he was of the opinion that it was of great value in the treating of influenza and pneumonia, at least.

Dr. C. S. Chase, of Bayshore, Long Island, read a very interesting report of a case of "Vegetative Poisoning in a Cow." This paper was discussed by Drs. Grange, Grenside, Ackerman and others.

A vote of thanks was extended to Drs. Grange, Ryder and Chase for their contributions to the evening's program.

Meeting adjourned at 11 p. m.

W. REID BLAIR, *Secretary*.

NORTH DAKOTA VETERINARY ASSOCIATION.

The sixth annual meeting of this association convened in the recitation room of the Veterinary Department of the Agricultural College at Fargo, N. D., on January 14, 1908, at 10 a. m., with Pres. W. F. Crewe in the chair.

President's address.

Roll call revealed the following members present: Drs. E. J. Davidson, Grand Forks, N. D.; B. C. Taylor, Hillsboro, N. D.; D. Fisher, Grandin, N. D.; L. Van Es, Agricultural College, Fargo, N. D.; J. W. Dunham, Fargo, N. D.; C. H. Martin, Valley City, N. D.; J. W. Robinson, Coal Harbor, N. D.; W. F. Crewe, Devil's Lake, N. D.; J. B. Campbell, Larimore, N. D.; G. D. Fisher, Hope, N. D.; J. A. Winsloe, Cooperstown, N. D.; A. A. Walker, Casselton, N. D.; J. P. Chisholm, Lisbon, N. D.

Dr. R. A. Glynn, of the B. A. I., stationed at Fargo, N. D., was a visitor at the meeting.

Minutes of the last meeting were read and approved.

Report of committees.

Standardization of Mallein and Tuberculin Tests, Relating to Elevation of Temperatures, etc., by Dr. Van Es.

Creating a schedule of Uniform fees for same, by Dr. Campbell.

Legislation, by Drs. Robinson and Walker.

Resolution, by Drs. Van Es and Crewe.

Programme, by Drs. Campbell and Van Es.

The following applications were presented for membership: Drs. C. E. Simmons, Wimbledon, N. D.; R. C. Cliff, Park River, N. D.; W. R. Cross, Grafton, N. D.; W. T. Brophy, Harvey, N. D.; E. A. Laing, Jamestown, N. D.; W. H. Hopkins, Minot, N. D.; J. F. Hughes, Fargo, N. D.; V. N. Dakken, Leeds, N. D.

All were voted on and admitted under suspension of the rules.

Meeting adjourned until 2 p. m.

Meeting called to order at 2.30 p. m.

The election of officers being the next in order the following officers were elected for the ensuing year:

President—B. C. Taylor, Hillsboro, N. D.

Vice-President—D. Fisher, Grandin, N. D.

Secretary—C. H. Martin, Valley City, N. D.

Treasurer—A. A. Walker, Casselton, N. D.

Reading of papers and discussion.

"Swamp Fever," by D. Fisher; discussion by Davidson, Van Es, Simmons, Taylor and Cliff.

"Milk Inspection," by J. W. Dunham; discussed by all members present.

"Pus in the Guttural Pouches," by B. C. Taylor, also specimens of pus calculi removed; discussion by all members.

"Tetanus," by L. Van Es; discussion by all members present.

"Hernia," by J. W. Robinson, reporting methods of operations on the various kinds, etc., which brought up a lengthy discussion.

"Capped Elbow," by C. H. Martin; discussed by all members present.

"Contagious Diseases," by W. F. Crewe, State Veterinarian, giving an outline of the work done the past year, which was very instructive, and brought out a lengthy discussion by all members present.

Clinics were held at the stock judging pavilion at the A. C. barns at 10 a. m., January 15.

Ovariectomy in bitch, by Dr. Davidson.

Cautery for spavin, by Dr. G. Fisher.

Cautery for ringbone, by L. Van Es.

Clinics adjourned until 2 p. m.

Removal of nasal polyp, by Dr. L. Van Es.

Exhibition of periostitis of lower third of tibia.

Exhibition of diseased lymphatic glands.

Clinics were followed by session in veterinary laboratory with exhibitions of Swine and Bovine Tubercular specimens obtained from inspectors in charge of the B. A. I., at Bismarck, N. D.; Sioux City and South St. Paul, demonstrated by Dr. Van Es.

Meeting then convened at assembly room.

A vote was taken as to the next location of annual meeting and Fargo selected, subject to call of Committee on Programme.

It was moved by Walker, seconded by Robinson, that a committee be appointed to make arrangements for a banquet to be held in connection with the next meeting. Carried.

Moved by Van Es, seconded by Robinson, that the secretary be instructed to acknowledge and thank Grand Forks Commercial Club for invitation to hold next meeting in their city. Carried.

Motion made by Cliff, seconded by Cross, that a vote of thanks be extended to Dr. Van Es for assistance and courtesies extended to meeting and association. Carried, rising vote.

The following were the committees appointed by President Taylor:

- Banquet—Dunham, Van Es and Hughes.
- Diseases—Crewe, Hopkins and Dakken.
- Finance—Dunham, Chisholm and Winsloe.
- Legislation—Tracy, Robinson and Walker.
- Resolutions—Van Es, Simmons and Brophy.
- Programme—Martin, Cliff and Cross.
- Membership—Davidson, G. Fisher and Simms.

Meeting then adjourned until next annual meeting, subject to call of secretary.

C. H. MARTIN, *Secretary*.

KANSAS VETERINARY MEDICAL ASSOCIATION.

The fourth annual meeting of this association was held at Manhattan, Kan., January 2-3, 1908.

President D. C. Pritchard being absent, First Vice-President G. G. Furnish called the meeting to order in Room 26 of the Chemistry building at 2.30 p. m.

1. An address of welcome by Pres. E. R. Nichols, of the Kansas State College.

2. Dr. T. W. Hodley responded to the above.

3. A paper, "Tuberculosis," was read by J. C. Kendall.

Although State Dairy Commissioner (but now professor of Dairying at K. S. C.), his points were in line with veterinary contentions. Discussion opened by Dr. O. O. Wolf and continued by Dr. Schoenleber, Dr. Crumbine, of State Board of Health; Dr. Knisely, Dr. Hodley, Prof. Wilson, Dr. Kinsley, Dr. McClelland, Dr. Maxwell, Dr. Rogers and Dr. Guilfoil.

Motion made by Dr. Hodley that the president appoint a committee to work with the State Board of Health in securing legislation combating tuberculosis and other contagious diseases.

4. Prof. W. E. King gave a talk and demonstration of diagnosing glanders by the agglutination method. Discussion opened by Dr. Pyle.

5. Dr. W. M. Hobbs gave an interesting talk upon "Blind Staggers." Discussed by Dr. Schoenleber and others.

Moved to reconsider the motion calling for a committee to confer with the State Board of Health.

Adjournment / motion carried.

Meeting reconvened in Old Chapel at 7.30 p. m., being called to order by V. P. Furnish. General order of business followed.

Motion carried that a committee be appointed to redraft the constitution.

Following veterinarians admitted to membership: Dr. H. S. Fritz, Junction City; Dr. B. A. Robinson, Independence; Dr. L. W. Goss, Manhattan.

Election of officers resulted as follows: President, Dr. J. F. Jones, Arkansas City; first vice-president, Dr. H. S. Maxwell, Salina; second vice-president, Dr. C. B. McClelland, Lawrence; secretary-treasurer, Dr. Burton Rogers, Manhattan. Executive Board—Dr. W. T. King, Olathe; Dr. W. M. Hobbs, Holton; Dr. C. B. Kern, Beloit.

Motion carried to appoint committee on resolutions to draft resolutions expressing our appreciation of Hon. C. A. Stannard, and his services in securing passage of the veterinary practice act.

Programme continued.

1. Castration of Stallions—Standing Operation, Dr. Charles Saunders.

2. Municipal Meat and Milk Supplies, Burton Rogers.

A few specimens demonstrating same.

3. Kansas Parasites, by P. J. Kirschner, but read by O. O. Wolf.

Committees appointed: Resolutions—O. O. Wolf, W. B. Flanders, E. H. Killian. Constitution and By-Laws—C. B. McClelland, C. W. Hobbs, Chas. Saunders.

Motion carried that the chair appoint a committee of three or five on legislation, to be known as Committee on General Legislation, and given power to act as they see best for the best interests of the general public.

Adjournment, motion to meet at 9 a. m. in College Hospital, carried.

Meeting at College Hospital, where the following clinic was carried out:

Ovoporectomy in Mare, Dr. D. O. Knisely.

Ovoporectomy in Bitch, Dr. T. W. Hodley.

Meeting reconvened in Old Chapel at 12.30 p. m., being called to order by Vice-Pres. O. O. Wolf.

Report of committee on constitution heard, and motion carried to accept as a report of progress and continue.

Resolutions 4a, 4b, 4c and 4d passed.

Motion made to meet in Topeka at the usual time in 1909, declared out of order, being so in constitution.

Motion to amend constitution and meet in Manhattan lost because of legislature meeting in Topeka in 1909.

Motion carried for a recess to partake of a lunch provided by Dr. Schoenleber. Meeting reconvened.

Programme.

1. Intestinal Disorders, D. O. Knisely.

2. Paper, C. B. Kern.

3. Address, Dr. C. W. Burkett.

Remarks by Drs. De Wolf, Wolf, Schoenleber, McClelland and Rogers.

4. Hypodermic Medication, F. W. Caldwell.

Reports of cases by Dr. H. R. Groome, Dr. F. W. Caldwell.

5. Extemporaneous address, Senator W. A. Harris.

6. Address, Dr. Schoenleber.

The following were made members: Drs. Frank S. Beattie, Fred W. Caldwell, W. N. Matteer, J. P. Jones, C. E. Bassler, H. R. Groome, J. H. Cheney.

Thirty-nine members in attendance.

Resolutions.

4a.

Be it Resolved, That we, the Kansas Veterinary Medical Association, in our fourth annual session assembled, that in view of the able and efficient services rendered by our worthy secretary, Dr. H. S. Maxwell, do hereby express our sincere thanks and gratitude.

4b.

Whereas, The success of our present laws governing the practice of veterinary medicine in this state was largely brought about and passed through the efforts of Hon. C. A. Stannard, be it hereby

Resolved, That we extend to him our appreciation of his efforts in our behalf, and instruct that a copy of this resolution be sent him, and further, that it be recorded on the minutes of this association.

4c.

Whereas, The management of the Kansas State College has been very liberal in opening their doors and assisting in every way possible in making this meeting a success, be it hereby

Resolved, That a vote of thanks be extended to them and that Drs. Schoenleber and Barnes be especially remembered.

4d.

Whereas, There is no more important question before the people of all civilized countries than the quick, sane, economical eradication of both human and animal tuberculosis, be it hereby

Resolved, By the Kansas Veterinary Medical Association, that it heartily approves of the work of the International Tuberculosis Congress, which meets at Washington, D. C., September 21 to October 12, 1908; that each and every member of this association do everything in their power to co-operate with this movement; that Governor Hoch be petitioned to appoint a veterinarian as one of the official delegates from Kansas.

4f.

Whereas, No more important question confronts the people of Kansas than the complete eradication of tuberculosis;

Whereas, Education is the first requisite in this campaign;

Whereas, While veterinary practitioners residing in various parts of the state are at heart desirous of carrying on such an educational propaganda, it cannot help but be interpreted by some of our clients as an *agitation* instead, and therefore unjustly interfere with the legitimate livelihood of the practising veterinarians;

Whereas, The veterinarians at the Kansas State College are public servants of *all* the people, be it hereby

Resolved, That the extension department of the Kansas State College enter this field; that a copy of this resolution be sent to the honorable members of the Board of Regents and Supt. J. H. Miller, of the Kansas State College.

O. O. WOLF,	}	<i>Committee on Resolutions.</i>
W. FLANDERS,		
E. H. KILLIAN,		

BURTON ROGERS, *Secretary.*

NEWS AND ITEMS.

"I would not think of being without the REVIEW though it cost many times the price."—(*Robt. P. Smith, D. V. S., Edison, Neb.*)

G. W. BROWNING, V. S., has resigned his position as veterinary inspector, B. A. I., to become Assistant State Veterinarian of Alabama.

DR. WM. H. GRIBBLE retires from the position of secretary of the Ohio State Veterinary Medical Association with eighteen years of faithful service to his credit.

A DAINTY dairymaid in Cologne, Prussia, having read that milk baths enhanced female beauty, bathed in the milk she was employed to sell and then sold it to her employer's patrons.

The Board of Trustees of Cornell University has appointed Dr. Veranus A. Moore, Director of the New York State Veterinary College, to take effect upon the retirement of Dr. James Law, in June of this year.

"Do YOU think that the automobile will displace the horse?" asked the conversational young woman.

"It will," answered the nervous young man as he gazed down the road, "if it ever hits him."—(*Washington Star.*)

DR. GEO. H. BERNS, of Brooklyn, N. Y., one of the most successful veterinary practitioners in America, recently had the misfortune, while getting out of his carriage, to slip and break his leg. Dr. Bern's colleagues sincerely trust that his recovery may be accomplished with the least possible amount of discomfort and inconvenience.

MINNESOTA VETERINARY ASSOCIATION RECOGNIZED.—The Minnesota State Veterinary Association was recognized and admitted to membership in the State Agricultural Society at the January meeting of the latter body. This means the seating of three delegates, the same representation as the Live Stock Breeders' Association and other similar state organizations which make up the membership of the State Agricultural Society.

It means that the Minnesota State Veterinary Association has a voice in the management of the largest fair in the United States in point of attendance, gate receipts and exhibits.

SWEATERS FOR DOGS.—"I spent the winter in St. Moritz," said a Western girl. "In that white town, 6,000 feet up among the Alps, everybody wears a sweater. Skating, skiing, coasting, if you are not clad in a white sweater your dress is incorrect. The prettiest, quaintest thing there is the way all the dogs wear sweaters, too. A sweater is just the thing for a dog. Fitting tight, leaving the legs free, outlining the graceful body, it is at once comfortable and becoming. And in St. Moritz all the dogs wear sweaters. Bulldogs, dachshunds, collies, fox terriers, each capers about in the white snow in a white sweater."—(*N. Y. Press.*)

ELECTROCUTING ANIMALS.—The slaughter of animals for food by electrocution is being experimented by Dr. Leduc, a French scientist, who has been conducting his investigations in the French abattoirs. He has been using the intermittent low tension currents and says that he is satisfied that the system is painless, the central functions of perception being first destroyed and then those of circulation and respiration, so that there is neither suffering nor reaction in the animals thus killed. The doctor is endeavoring to devise some piece of apparatus by which the killing of cattle may be accomplished by electricity with economy and celerity.

OFFICIAL VETERINARIAN OF QUEENSLAND VISITS AMERICA.—Sydney Dodd, F. R. C. V. S., Director Veterinary and Bacteriological Departments, Brisbane, Queensland, has been in this country some two or three months studying the tick problem. It seems that the Queensland tick is different from our tick and that it is carried by the Queensland goats.

While here Dr. Dodd took advantage of the opportunity of learning all he could of the scope and character of the veterinary sanitary service of the federal government. Among the places he visited was the U. S. Animal Quarantine Station for the Port of New York, located at Athenia, N. J. Dr. Geo. W. Pope, superintendent of the station, extended every courtesy to our distinguished visitor, who carries back to his country a favorable opinion of the veterinary control work of the Bureau of Animal Industry.

MODEL PURE MILK SYSTEM.—As a result of the pure milk agitation in the District of Columbia a bill has been prepared which is intended to establish in Washington, D. C., a model system for other places to copy.

It looks to the thorough inspection of the milk by a large force of inspectors, composed in part of skilled veterinarians. Licenses to sell milk are to be issued only to those that come up to a prescribed standard.

Based on the law, if it is enacted, there will be detailed regulations governing every phase of handling of milk in the District of Columbia and supplying it to patrons.

There will also, it is expected, be a strong demand upon Congress for appropriations adequate to provide a thorough system of interstate milk inspection by the Bureau of Animal Industry.

A large number of municipalities all over the United States are giving attention to the question of getting pure milk, and the officials of the dairy division of the Department of Agriculture are in touch with most of these municipalities, keeping four Government officials in the field constantly for the purpose of co-operating with local boards of health and local officials in making inquiries into the sanitary conditions surrounding the sale of milk.

In recent months, it is stated, about fifty cities and towns in the United States have gone into the sanitary milk problem assisted by the Government officials.

In co-operation with the local officials, the Government experts have made inquiries into the sanitary conditions surrounding the milk business in such cities as Cleveland, Memphis, Richmond, Atlanta, and many other smaller municipalities. Cleveland was one of the first cities to give serious attention to the question of pure milk.—(*N. Y. Journal of Commerce*).

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 8, 9, 10 & 11.	Philadelphia..	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July 9, 10, 1908..	Newark.....	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	.....	Hartford.....	B. K. Dow, Williamantic.
New York S. V. M. Soc'y.....	Sept., 1908.....	Utica.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	June 17.....	Reading.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call of Chair.....	Paterson, N. J..	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n.....	April 8, 1908.....	Waterville.....	A. Joly, Waterville.
Central Canada V. Ass'n.....	.....	Ottawa.....	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	.....	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	April, 1908.....	141 W. 54th St.	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	July, 15, 1908.....	Galesburg.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	.....	Decatur.....	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	July 2-3, 1908.....	Raleigh.....	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.....	Sidney D. Myers, Wilmington.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh.....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	.....	Rochester.....	J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	July, 8-9, 1908.....	Duluth.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	March, 1908.....	Philadelphia..	F. H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	A. W. Ormiston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n.....	June, 1908.....	Denver.....	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	Kansas City..	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	Jan. and June..	Providence.....	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n.....	.....	.....	C. H. Martin, Valley City.
California State V. M. Ass'n.....	Mch. Je. Sep. Dec	San Francisco..	C. M. Haring, U. C., Berkeley.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy. Oct.	Los Angeles..	J. A. Edmonds, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	.....	Manhattan.....	Hugh S. Maxwell, Salina.
Ass'n Médécalle Veterinaire Française "Laval".....	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A.....	.....	Mon. and Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	Not decided.....	D. A. Piatt, Lexington.
Washington State Col. V. M. A.....	Monthly.....	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.....	An'l, Jan., '09.....	Indianapolis..	E. M. Bronson, Indianapolis.
Louisiana State V. M. Ass'n.....	.....	.....	E. F. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu. ea. mo.	St. P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n.....	.....	Auburn, Ala.	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	.....	.....	C. L. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn.....	June, 1908.....	Philadelphia..	B. T. Woodward, Wash'n, D. C.
Virginia State V. M. Ass'n.....	July 17, 1908.....	Norfolk.....	W. G. Chrisman, Charlo'sville
Oklahoma V. M. Ass'n.....	.....	.....	W. H. Martin, El Reno.
Veterinary Practitioners' Club.....	Monthly.....	.....	A. F. Mount, Jersey City.
Vet. Ass'n Dist. of Columbia.....	4th Wed. ea. mo.	514-6th St., N. W.	F. M. Ashbaugh, Wash., D. C.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	J. Madsen, Chicago, Ill.
Arkansas Veterinary Society.....	.....	.....	B. H. Merchant, Little Rock.
York Co. (Pa.) V. M. A.....	March 3, 1908.....	York, Pa.....	E. S. Bausticker, York, Pa.
Philippine V. M. A.....	.....	.....	R. H. McMullen, Manila.
Montana State V. M. A.....	Oct., 1908.....	Helena.....	.....
Veterinary Ass'n of Alberta.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Chicago Veterinary Society.....	2d Tues. ea. mo.	Chicago.....	J. M. Parks, Chicago.

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DR. H. J. THOLE REPLIES.

February 11, 1908.

ROBERT W. ELLIS, D. V. S., New York:

MY DEAR DR.—The few lines you so kindly published in January REVIEW brought me 125 letters in reply to same. While I would like very much indeed to answer each and every one with a personal letter, I find this procedure would be impossible at the present state of my health. If it is not asking too much, will you please inform your readers of REVIEW that my practice has been turned over to a Dr. Taylor, of New York City.

Thanking you sincerely for past favors, etc., I beg to remain,

Very respectfully yours,

H. J. THOLE,

Box 18, Brookville, Ind.

We are advised by the PASTEUR VACCINE CO., LTD., sole concessionaires for the United States of the biological products of the Institut Pasteur, Paris, France, that they are now furnishing TUBERCULIN SOLUTION and MALLEIN SOLUTION so that they will keep for several months instead of a few days as heretofore, and that they are also furnishing them in 1, 2, 5 and 10-dose packages. This improvement, no doubt, will appeal to the profession, as it is now possible to obtain Tuberculin and Mallein, ready for use, in just the quantities desired and with the difficulty of deterioration practically eliminated.

This company is continually putting out new and reliable products of interest to the profession, and we suggest that our readers keep in touch with them. They have offices in this country in New York and Chicago.

NITROX CHEMICAL COMPANY TO THE FRONT.

A list of the products of the NITROX CHEMICAL COMPANY will be found on the inside of the front cover page of this and subsequent issues.

THE use of the IMPREGNATOR in horse breeding has become general among well informed stallion owners, as they understand the great help such an article is in breeding and the increased income they derive from their stallions through their use. Get address from advertisement to your right and write for illustrated catalogue, which will be found both interesting and instructive.

VETERINARIANS who desire to keep abreast of the times will avail themselves of the special offer contained in the advertisement of TALLIANINE, on page 18. The syringe referred to is the well-known standard instrument which MESSRS. WALTER F. SYKES & Co. have developed in conjunction with TALLIANINE.

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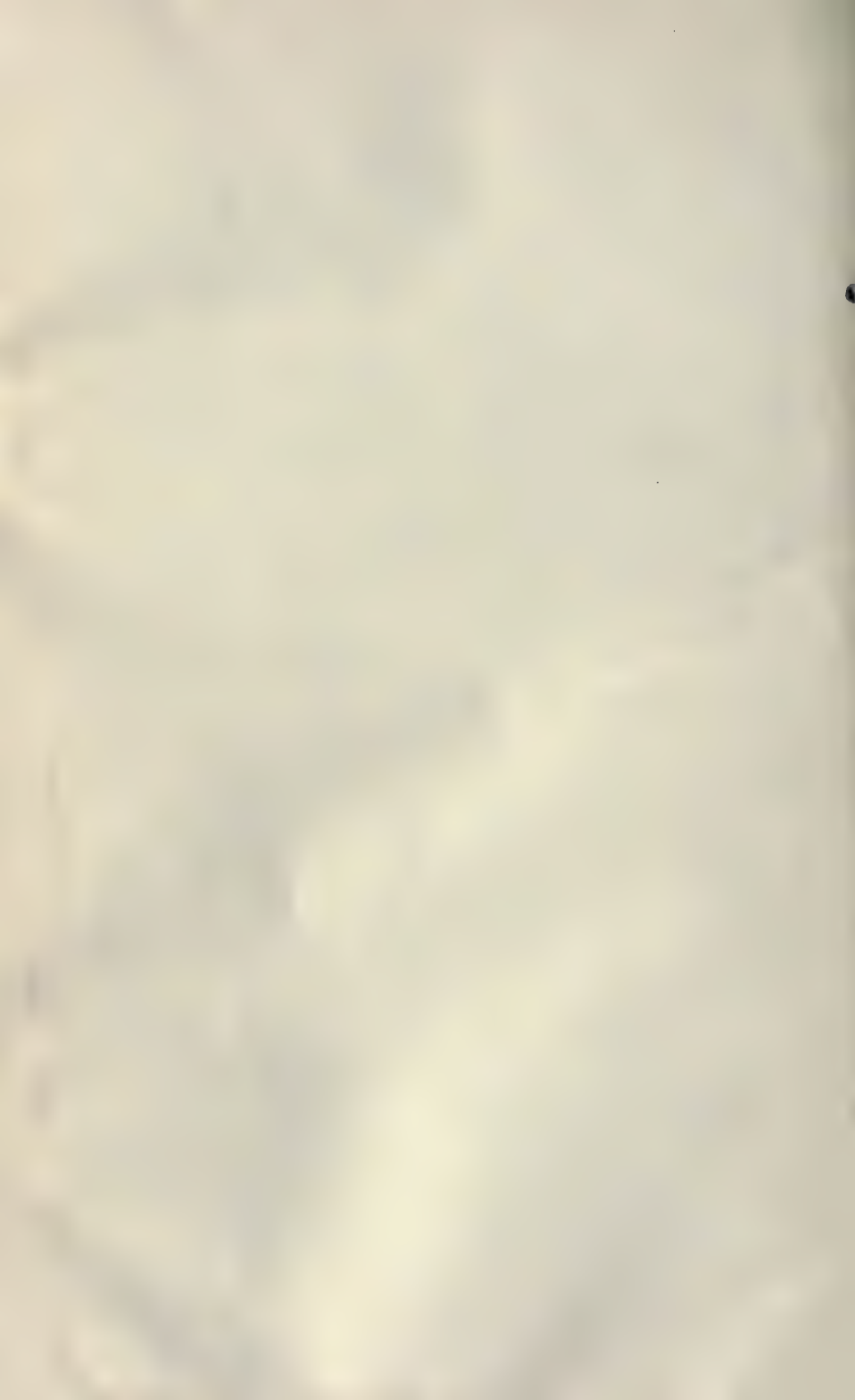
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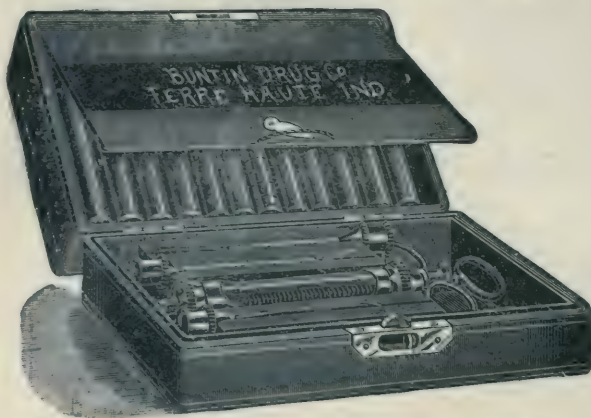
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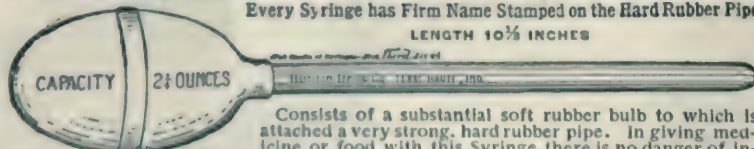
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113	Eserine Salicylate.....	1-4 gr.	50
133	Eserine Salicylate.....	1-2 gr.	75
134	Eserine Salicylate.....	1 gr.	1 25
135	Eserine Salicylate.....	1- $\frac{1}{2}$ grs.	1 90
106	Eserine Compound.....		1 00
	{ Eserine Salicylate.....	1-4 gr. }	
	{ Pilocarpine Muriate.....	1-2 gr. }	
	{ Strychnine.....	1-8 gr. }	
153	Eserine and Pilocarpine.....		1 50
	{ Eserine.....	1-2 gr. }	
	{ Pilocarpine.....	1 gr. }	
154	Colic (Forbes).....		2 75
	{ Eserine Salicylate.....	1 gr. }	
	{ Pilocarpine Mur.....	3- $\frac{1}{2}$ grs. }	
107	Hyoscyamine Sulphate, Crystals.....	1-8 gr.	1 00
146	Hyoscyamine Sulphate, Crystals.....	1-4 gr.	1 30
108	Morphine Sulphate.....	1 gr.	25
136	Morphine Sulphate.....	1- $\frac{1}{2}$ grs.	35
137	Morphine Sulphate.....	2 gr.	40
138	Morphine Sulphate.....	2- $\frac{1}{2}$ grs.	50
155	Morphine Sulphate.....	3 grs.	60
109	Morphine and Atropine.....		45
	{ Morphine Sulph.....	1- $\frac{1}{2}$ grs. }	
	{ Atropine Sulph.....	$\frac{1}{2}$ gr. }	
139	Morphine and Atropine.....		45
	{ Morphine Sulph.....	1- $\frac{1}{2}$ grs. }	
	{ Atropine Sulph.....	$\frac{1}{4}$ gr. }	
140	Morphine and Atropine.....		55
	{ Morphine Sulph.....	2 grs. }	
	{ Atropine Sulph.....	1-4 gr. }	
141	Morphine and Atropine.....		60
	{ Morphine Sulph.....	2- $\frac{1}{2}$ grs. }	
	{ Atropine Sulph.....	1-4 gr. }	
142	Nitroglycerine.....	1-10 gr.	14
143	Nitroglycerine.....	1-5 gr.	17
110	Pilocarpine Muriate, Crystals.....	1-2 gr.	55
144	Pilocarpine Muriate, Crystals.....	1 gr.	90
145	Pilocarpine Muriate, Crystals.....	1- $\frac{1}{2}$ grs.	1 10
111	Sodium Arsenite.....	1 gr.	12
112	Strychnine Sulphate.....	1-4 gr.	12
147	Strychnine Sulphate.....	1-2 gr.	13
148	Strychnine Sulphate.....	1 gr.	14
149	Veratrine Muriate.....	1-4 gr.	13
150	Veratrine Muriate.....	1-2 gr.	14

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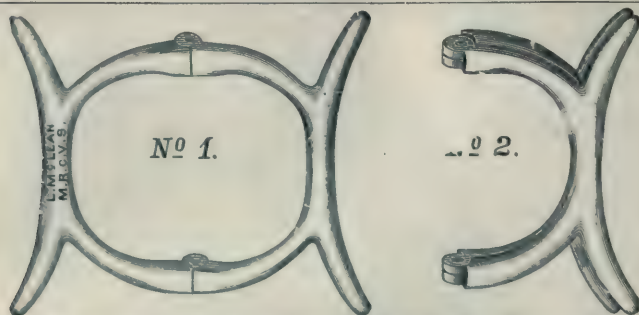
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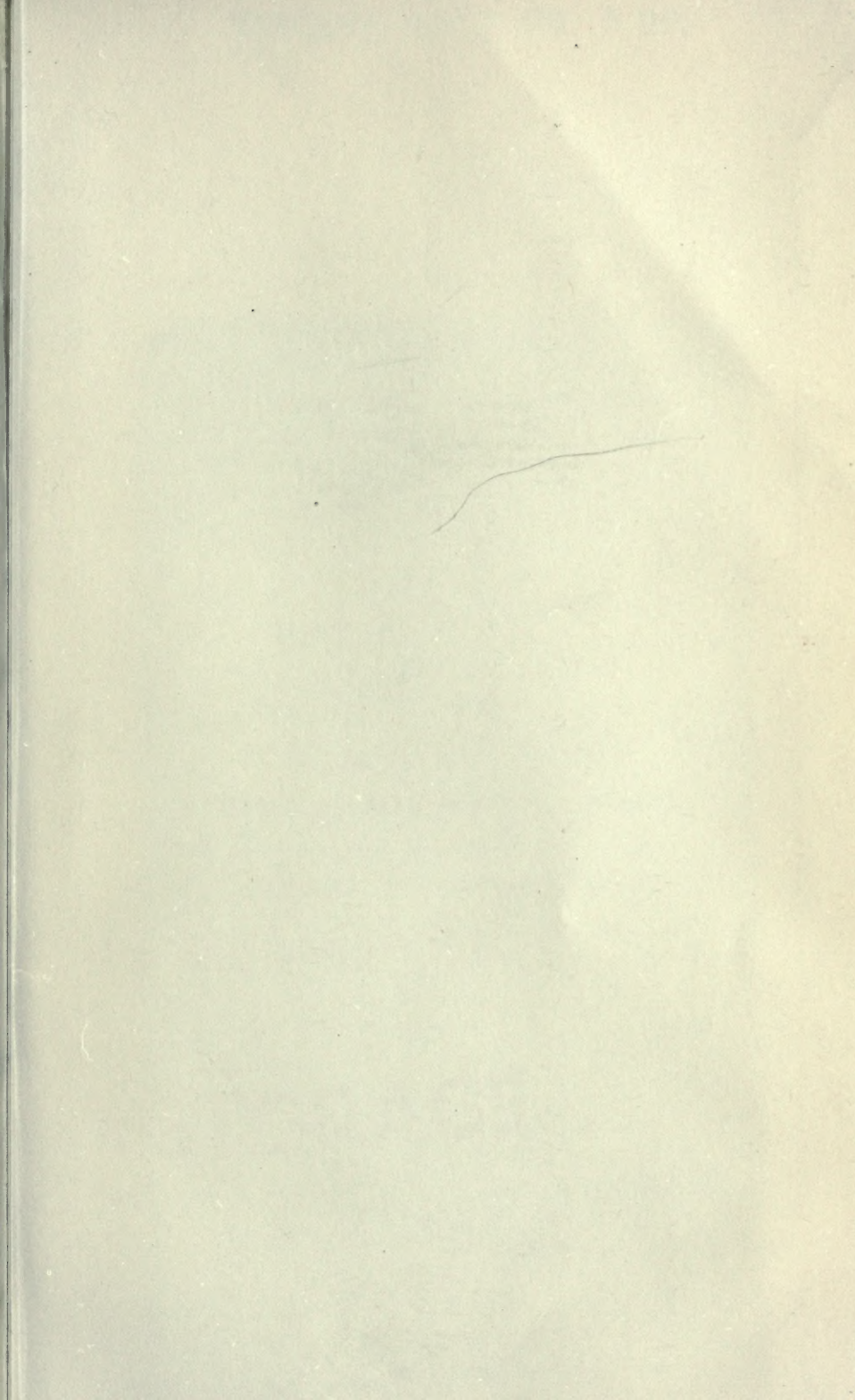


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